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THEODORE ROOSEVELT

MEMORIAL EDITION

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THE WORKS OF THEODORE ROOSEVELT

MEMORIAL EDITION

VOLUME IV

E660
.R84

m.b.T., Jan. 30-24

We the undersigned, Theodore Roosevelt party of the first part, and William Merrifield and Sylvanus Ferris, parties of the second part do agree and contract as follows.—

1) The party of the first part hereby agrees and contracts to put on the ranche of the parties of the second part situate on the Little Missouri, in addition to the stock he now has thereon, one thousand head of cattle or thereabouts, the cost not to exceed twenty six thousand dollars ($26,000.00)

2) The parties of the second part hereby agree and contract to take charge of said one thousand additional head of cattle on the same terms as they now take charge of the cattle of said party of the first part now on their ranche, pursuant to the contract entered into between said party of the first part and said parties of the second part on the 27th day of September 1883; and all the provisions of said contract are to be held to affect the care, sale and accounting for the said one thousand head of cattle, or thereabouts, precisely as if they were part of the herd of cattle now on the ranche of said parties of the second part and belonging to said party of the first part.

(Signed)
Theodore Roosevelt
(party of the first part)
Wm: Merrifield
Sylvanus Ferris
(parties of the second part)

Witness.
H. Macaulay
Witness.
Gregor Lang

Little Missouri, Dakotah
June 12th 1884.

CONTRACT FOR OPERATING
CHIMNEY BUTTE RANCH

A BOOK-LOVER'S HOLIDAYS IN THE OPEN

RANCH LIFE AND THE HUNTING TRAIL

BY

THEODORE ROOSEVELT

NEW YORK
CHARLES SCRIBNER'S SONS
MCMXXIV

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THE NATURALIST AND BOOK-LOVER: AN APPRECIATION*

By William Beebe

The Century Dictionary defines Introduction as "the act of making acquainted; a formal presentation." The presumption, the absolute needlessness of any such attempt on my part in regard to Colonel Theodore Roosevelt or his writings, has impelled me to change the title of these few words. And my pen falters even in an Appreciation. Colonel Roosevelt and one other have touched my life as no other human beings ever can, and my host of intimate memories from the first time I ever spoke to him to his last letter, which reached me twenty-four hours after his death—these are too perfect to disturb, rearrange, and attempt to translate into abortive words, impotent phrases.

If I could possess only a single volume of Colonel Roosevelt's I should choose "A Book-Lover's Holidays in the Open," for in it are some of his most relaxed, his richest, literary moments. Once when we were walking Indian file down a steep wood trail headed away from Sagamore Hill, he turned suddenly and said:

"What book of mine do you like best?"

And I answered without hesitation, for it had been running through my mind that very instant:

"The Foreword of your 'Book-Lover's Holidays.'"

Then I quoted, as I often have in lectures:

"The grandest scenery of the world is his to look at if he chooses; and he can witness the strange ways of

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tribes who have survived into an alien age from an immemorial past, tribes whose priests dance in honor of the serpent and worship the spirit of the wolf and the bear. Far and wide, all the continents are open to him as they never were to any of his forefathers; the Nile and the Paraguay are easy of access, and the border-land between savagery and civilization; and the veil of the past has been lifted so that he can dimly see how, in time immeasurably remote, his ancestors—no less remote—led furtive lives among uncouth and terrible beasts, whose kind has perished utterly from the face of the earth. He will take books with him as he journeys; for the keenest enjoyment of the wilderness is reserved for him who enjoys also the garnered wisdom of the present and the past."

If the trammels of language to thought are so great, then, as I have said, those of the written word are immeasurably more so. The casual reader will claim, and rightly, a high place for Colonel Roosevelt for his writings, but unless one has taken scores of long walks and rides alone with him, has motored through civilization and has tramped through lonely jungles with him, and, above all, unless one has spent innumerable evenings and quiet hours when only four were present and one of these always Mrs. Roosevelt, one can never begin to appreciate the subtlety of his imagination, the delicacy of his thought, the wealth of simile and quotation, his perfect sense of humor. The "big stick" became a rapier on such occasions, stimulating in flash and touch; the "square deal" changed into a softened, mobile gift of conversation. Participation demanded keen attention and responsibility in sustaining one's point of view, for he continually tossed the theme from one to another of us—themes which never faltered or fell to earth. I

have never, either in European salons or among the best American minds, known conversation of equal brilliancy.

" . . . tribes who have survived into an alien age from an immemorial past."

". . . in time immeasurably remote, his ancestors—no less remote—led furtive lives among uncouth and terrible beasts."

In all his writings I can recall no other sentences which express this superlative plane, which was so aroused and stimulated by a small, sympathetic family group. No essayist, no poet, has ever chosen words of more exquisite timbre and apt content, expressing the exact meaning of the right sense.

We often talked of the meaning of words and the difficulty of expressing delicate shades of ideas, briefly and tersely, in the English language. I remember one concrete instance when we were both at work on essays dealing with our native helpers in various countries. I happened to finish and publish mine first, calling it "Servants and Superservants," greatly to his assumed annoyance, claiming that I had left him nothing wherewith to clothe the title of his essay. Eventually he evolved the much better name of "Wild Hunting Companions," as published in the present volume.

Whenever in any of my writings I have mentioned Colonel Roosevelt, I find it is always in conjunction with books and the open:

" . . . I would look out of the window one morning in days to come, and thrill at the sight of falling flakes. The emotion would very probably be sentiment—the memory of wonderful northland snow-storms, of huge fires, of evenings with Roosevelt, when discussions always led to unknowable fields, when book after book

yielded its phrase or sentence of pure gold thought. On one of the last of such evenings I found a forgotten joy-of-battle speech of Huxley's, which stimulated two full days and four books reread—while flakes swirled and invisible winds came swiftly around the eaves over the great trophies—*poussant des soupirs*—we longing with our whole souls for an hour of talk with that splendid old fighting scientist."

Colonel Roosevelt had the very sane habit of balancing his political and historical and scientific reading with an occasional wildly exciting detective story, and we read and reread Maurice Leblanc and others of his ilk. His infallible memory was revealed in unexpected ways. After an evening of talk ranging from exploration and evolution to airplanes and instinct, we would go out on the veranda and play the game of spooky stories. Each of us would try to outdo the other, but there was never any doubt about the winner. He would always end with some story of stories, made up on the spur of the moment, teeming with ghastly bits of reality and supernaturalism gleaned from a dozen volumes or his own imagination, combined in so convincing and startling a manner that it would have made a best-seller if it could have been taken down on the spot.

The term single-minded is meaningless unless we can reduce it from abstract statement to concrete example, and in science Colonel Roosevelt was single-minded because his goal was that solitary point in mental space—the truth. He was ever conscious that two truths, two explanations of the same phenomenon, could not exist. I worked with him through all his nature-faking protest, his protective coloring arguments, and his delightful, humorous *Atlantic Monthly* letters. He would sometimes meet me with boiling enthusiasm over some minor

point in protective coloring, complete except for a single corner-stone which he hoped I might supply from field observations in Borneo or India. Twice, I remember being unable to furnish the required support, and indeed, forced to contribute a devastating fact. Instantly, without hesitation, he opened both hands, let the carefully built-up theory slip to the ground, with a whimsical remark about letting our opponents have the full use of it. It was seldom, however, that his thoughtfully reached conclusions were at fault, for with his experience at first hand, his memory, and his naturally scientific mind he was one of the best field naturalists we have ever had in America.

When I first planned my research station in the tropics, the beginning of the Department of Tropical Research of the New York Zoological Society, Colonel Roosevelt was as interested as if it were some political event of great import. And because he made me think it was, it was successful; that was one of his great powers. Together with Henry Fairfield Osborn we talked it over from all points of view, Colonel Roosevelt as fertile in visualizing difficulties to be met and overcome as with actual constructive, progressive ideas. This was the joy of anticipation, to be followed by realization. His joy in every aspect of tropical life was shown months afterward, on the first day of his arrival in Georgetown, before we went up-river to my laboratory—an incident which I have already recorded elsewhere. We were waiting for a glimpse of manatees in the Botanical Gardens, standing on a little, curved, Japanese bridge. It was wholly a matter of luck whether we saw them at all, and after ten minutes without a ripple on the water I put a question. Colonel Roosevelt answered: "I would willingly stand for two days

to catch a glimpse of a wild manatee." And St. Francis heard, and, one after another, four great backs slowly heaved up; then an ill-formed head and an impossible mouth with the unbelievable harelip, and before our eyes the sea-cows snorted and gambolled.

The singleness of idea and ideal which I have mentioned often became a thing of superlative ecstasy under certain conditions. In regard to a trip, he was as great in anticipation as in realization. One of my most treasured card scribbles reads: "Edith and I are going to spend ten months on a yacht in the South Seas and you are to go with us and choose the rest of the party." We planned and diagrammed, accepted and rejected, interlarding most serious and important arrangements with such suggestions as that I was to land first on all cannibal islands as being infinitely less toothsome in appearance, and therefore safer from attack than the Colonel. It was a wonderful experience, and years later when I found myself actually among the islands of the Pacific, it was with a feeling that I had been there before, and that our trip, planned but never achieved in a physical sense, somehow had come true.

In a more recent year when Mrs. Roosevelt and I were being paddled by Indians and Bovianders through the hinterland of Guiana jungle, the consciousness of Colonel Roosevelt and what he would be doing if he were with us was always vivid. When the full-throated chanties rose from the paddle rhythms, we both knew he would not be sitting with us under the sheltered stern, but up among the men, paddling and singing. Whatever else Colonel Roosevelt bequeathed, the best is a lasting vividness, a dominating sense of actual presence, which for me undergoes no lessening with the years.

Walking through the woods on the way to swim, my eye once caught sight of a magnificent tulip tree towering high overhead. I said: "Colonel Roosevelt, isn't it great for such a marvellous race of organisms as the tulip trees of the past, to have their last representative on earth such a splendid tree as this?"

His answer was: "By George, yes! If I were the last of my race I would rather die a sabre-toothed tiger than a field-mouse!"

TO

ARCHIE AND QUENTIN

BIBLIOGRAPHICAL NOTE

A Book-Lover's Holidays in the Open. By Theodore Roosevelt. New York: Charles Scribner's Sons, 1916.

x, 373 pp., illus., 8vo, blue cloth.

This series of out-of-doors articles includes two chapters and an appendix which are new, together with several chapters reprinted from articles in the *Outlook*, etc. The *Outlook* material is entirely different from THROUGH THE BRAZILIAN WILDERNESS, which it supplements. Several editions have appeared. The chapters were originally published as follows:

I. A COUGAR-HUNT, in *Outlook*, October 4, 1913; II. ACROSS THE NAVAJO DESERT, in *Outlook*, October 11, 1913; III. THE HOPI SNAKE-DANCE, in *Outlook*, October 18, 1913; IV. THE RANCHLAND OF ARGENTINA AND SOUTHERN BRAZIL, rewritten and rearranged, with additions, from *Outlook*, February 7 and April 18, 1914; V. A CHILEAN RONDEO, with additions, from *Outlook*, April 25, 1914; VI. ACROSS THE ANDES AND NORTHERN PATAGONIA, partially rewritten, with additions, from *Outlook*, May 23, 1914; VII. WILD HUNTING COMPANIONS, and VIII, PRIMEVAL MAN, new material; IX. BOOKS FOR HOLIDAYS IN THE OPEN, in *Ladies' Home Journal*, April, 1915. This essay has been reprinted in raised type for the blind; X. BIRD RESERVES AT THE MOUTH OF THE MISSISSIPPI, in *Scribner's*, March, 1916; XI. A CURIOUS EXPERIENCE, in *Scribner's*, February, 1916; Appendices, new material.

Sections XII, XIII, XIV, not previously published in book form, originally appeared in *Scribner's Magazine* during 1917 as follows: A NATURALISTS' TROPICAL LABORATORY, in January; WHERE THE STEADY TRADE-WINDS BLOW, in February; and HARPOONING DEVIL-FISH, in September.

AUTHOR'S FOREWORD

The man should have youth and strength who seeks adventure in the wide, waste spaces of the earth, in the marshes, and among the vast mountain masses, in the northern forests, amid the steaming jungles of the tropics, or on the deserts of sand or of snow. He must long greatly for the lonely winds that blow across the wilderness, and for sunrise and sunset over the rim of the empty world. His heart must thrill for the saddle and not for the hearthstone. He must be helmsman and chief, the cragsman, the rifleman, the boat steerer. He must be the wielder of axe and of paddle, the rider of fiery horses, the master of the craft that leaps through white water. His eye must be true and quick, his hand steady and strong. His heart must never fail nor his head grow bewildered, whether he face brute and human foes, or the frowning strength of hostile nature, or the awful fear that grips those who are lost in trackless lands. Wearing toil and hardship shall be his; thirst and famine he shall face, and burning fever. Death shall come to greet him with poison-fang or poison-arrow, in shape of charging beast or of scaly things that lurk in lake and river; it shall lie in wait for him among untrodden forests, in the swirl of wild waters, and in the blast of snow blizzard or thunder-shattered hurricane.

Not many men can with wisdom make such a life their permanent and serious occupation. Those whose tasks lie along other lines can lead it for but a few years. For them it must normally come in the hardy vigor of

their youth, before the beat of the blood has grown sluggish in their veins.

Nevertheless, older men also can find joy in such a life, although in their case it must be led only on the outskirts of adventure, and although the part they play therein must be that of the onlooker rather than that of the doer. The feats of prowess are for others. It is for other men to face the peril of unknown lands, to master unbroken horses, and to hold their own among their fellows with bodies of supple strength. But much, very much, remains for the man who has "warmed both hands before the fire of life," and who, although he loves the great cities, loves even more the fenceless grass-land, and the forest-clad hills.

The grandest scenery of the world is his to look at if he chooses; and he can witness the strange ways of tribes who have survived into an alien age from an immemorial past, tribes whose priests dance in honor of the serpent and worship the spirits of the wolf and the bear. Far and wide, all the continents are open to him as they never were to any of his forefathers; the Nile and the Paraguay are easy of access, and the border-land between savagery and civilization; and the veil of the past has been lifted so that he can dimly see how, in time immeasurably remote, his ancestors—no less remote—led furtive lives among uncouth and terrible beasts, whose kind has perished utterly from the face of the earth. He will take books with him as he journeys; for the keenest enjoyment of the wilderness is reserved for him who enjoys also the garnered wisdom of the present and the past. He will take pleasure in the companionship of the men of the open; in South America, the daring and reckless horsemen who guard the herds of the grazing country, and the dark-skinned paddlers

who guide their clumsy dugouts down the dangerous equatorial rivers; the white and red and half-breed hunters of the Rockies, and of the Canadian woodland; and in Africa the faithful black gun-bearers who have stood steadily at his elbow when the lion came on with coughing grunts, or when the huge mass of the charging elephant burst asunder the vine-tangled branches.

The beauty and charm of the wilderness are his for the asking, for the edges of the wilderness lie close beside the beaten roads of present travel. He can see the red splendor of desert sunsets, and the unearthly glory of the afterglow on the battlements of desolate mountains. In sapphire gulfs of ocean he can visit islets, above which the wings of myriads of sea-fowl make a kind of shifting cuneiform script in the air. He can ride along the brink of the stupendous cliff-walled canyon, where eagles soar below him, and cougars make their lairs on the ledges and harry the big-horned sheep. He can journey through the northern forests, the home of the giant moose, the forests of fragrant and murmuring life in summer, the iron-bound and melancholy forests of winter.

The joy of living is his who has the heart to demand it.

THEODORE ROOSEVELT.

Sagamore Hill,
January 1, 1916.

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A BOOK-LOVER'S HOLIDAYS IN THE OPEN

"Come away! Come away! There's a frost along the marshes,
And a frozen wind that skims the shoal where it shakes the dead black water;
There's a moan across the lowland and a wailing through the woodland
Of a dirge that seeks to send us back to the arms of those that love us.

. . . . . .

Come away! come away!—or the roving fiend will hold us,
And make us all to dwell with him to the end of human faring."

EDWIN ARLINGTON ROBINSON

I

A COUGAR-HUNT ON THE RIM OF THE GRAND CANYON

ON July 14, 1913, our party gathered at the comfortable El Tovar Hotel, on the edge of the Grand Canyon of the Colorado, and therefore overlooking the most wonderful scenery in the world. The moon was full. Dim, vast, mysterious, the canyon lay in the shimmering radiance. To all else that is strange and beautiful in nature the canyon stands as Karnak and Baalbec, seen by moonlight, stand to all other ruined temples and palaces of the bygone ages.

With me were my two younger sons, Archie and Quentin, aged nineteen and fifteen respectively, and a cousin of theirs, Nicholas, aged twenty. The cousin had driven our horses, and what outfit we did not ourselves carry, from southern Arizona to the north side of the canyon, and had then crossed the canyon to meet us. The youngest one of the three had not before been on such a trip as that we intended to take; but the two elder boys, for their good fortune, had formerly been at the Evans School in Mesa, Arizona, and among the by-products of their education was a practical and working familiarity with ranch life, with the round-up, and with travelling through the desert and on the mountains. Jesse Cummings, of Mesa, was along to act as cook, packer, and horse-wrangler, helped in all three branches by the two elder boys;

he was a Kentuckian by birth, and a better man for our trip and a stancher friend could not have been found.

On the 15th we went down to the bottom of the canyon. There we were to have been met by our outfit with two men whom we had engaged; but they never turned up, and we should have been in a bad way had not Mr. Stevenson, of the Bar Z Cattle Company, come down the trail behind us, while the foreman of the Bar Z, Mr. Mansfield, appeared to meet him, on the opposite side of the rushing, muddy torrent of the Colorado. Mansfield worked us across on the trolley which spans the river; and then we joined in and worked Stevenson, and some friends he had with him, across. Among us all we had food enough for dinner and for a light breakfast, and we had our bedding. With characteristic cattleman's generosity, our new friends turned over to us two pack-mules, which could carry our bedding and the like, and two spare saddle-horses—both the mules and the spare saddle-horses having been brought down by Mansfield because of a lucky mistake as to the number of men he was to meet.

Mansfield was a representative of the best type of old-style ranch foreman. It is a hard climb out of the canyon on the north side, and Mansfield was bound that we should have an early start. He was up at half past one in the morning; we breakfasted on a few spoonfuls of mush; packed the mules and saddled the horses; and then in the sultry darkness, which in spite of the moon filled the bottom of the stupendous gorge, we started up the Bright Angel trail. Cummings and the two elder boys walked; the rest of us were on horseback. The trail crossed and recrossed the rapid

brook, and for rods at a time went up its boulder-filled bed; groping and stumbling, we made our blind way along it; and over an hour passed before the first grayness of the dawn faintly lighted our footsteps.

At last we left the stream bed, and the trail climbed the sheer slopes and zigzagged upward through the breaks in the cliff walls. At one place the Bar Z men showed us where one of their pack-animals had lost his footing and fallen down the mountainside a year previously. It was eight hours before we topped the rim and came out on the high, wooded, broken plateau which at this part of its course forms the northern barrier of the deep-sunk Colorado River. Three or four miles farther on we found the men who were to have met us; they were two days behindhand, so we told them we would not need them, and reclaimed what horses, provisions, and other outfit were ours. With Cummings and the two elder boys we were quite competent to take care of ourselves under all circumstances, and extra men, tents, and provisions merely represented a slight, and dispensable, increase in convenience and comfort.

As it turned out, there was no loss even of comfort. We went straight to the cabin of the game-warden, Uncle Jim Owens; and he instantly accepted us as his guests, treated us as such, and accompanied us throughout our fortnight's stay north of the river. A kinder host and better companion in a wild country could not be found. Through him we hired a very good fellow, a mining prospector, who stayed with us until we crossed the Colorado at Lee's Ferry. He was originally a New York State man, who had grown up in Montana, and had prospected through the mountains from the Athabaska River to the Mexican boun-

dary. Uncle Jim was a Texan, born at San Antonio, and raised in the Panhandle, on the Goodnight ranch. In his youth he had seen the thronging myriads of bison, and taken part in the rough life of the border, the life of the cow-men, the buffalo-hunters, and the Indian fighters. He was by instinct a man of the right kind in all relations; and he early hailed with delight the growth of the movement among our people to put a stop to the senseless and wanton destruction of our wild life. Together with his—and my—friend Buffalo Jones he had worked for the preservation of the scattered bands of bison; he was keenly interested not only in the preservation of the forests but in the preservation of the game. He had been two years buffalo warden in the Yellowstone National Park. Then he had come to the Colorado National Forest Reserve and Game Reserve, where he had been game-warden for over six years at the time of our trip. He has given zealous and efficient service to the people as a whole; for which, by the way, his salary has been an inadequate return. One important feature of his work is to keep down the larger beasts and birds of prey, the arch-enemies of the deer, mountain-sheep, and grouse; and the most formidable among these foes of the harmless wild life are the cougars. At the time of our visit he owned five hounds, which he had trained especially, as far as his manifold duties gave him the time, to the chase of cougars and bobcats. Coyotes were plentiful, and he shot these wherever the chance offered; but coyotes are best kept down by poison, and poison cannot be used where any man is keeping the hounds with which alone it is possible effectively to handle the cougars.

At this point the Colorado, in its deep gulf, bends

south, then west, then north, and encloses on three sides the high plateau which is the heart of the forest and game reserve. It was on this plateau, locally known as Buckskin Mountain, that we spent the next fortnight. The altitude is from eight thousand to nearly ten thousand feet, and the climate is that of the far north. Spring does not come until June; the snow lies deep for seven months. We were there in midsummer, but the thermometer went down at night to thirty-six, thirty-four, and once to thirty-three degrees Fahrenheit; there was hoarfrost in the mornings. Sound was our sleep under our blankets, in the open, or under a shelf of rock, or beneath a tent, or most often under a thickly leaved tree. Throughout the day the air was cool and bracing.

Although we reached the plateau in mid-July, the spring was but just coming to an end. Silver-voiced Rocky Mountain hermit-thrushes chanted divinely from the deep woods. There were multitudes of flowers, of which, alas! I know only a very few, and these by their vernacular names; for as yet there is no such handbook for the flowers of the southern Rocky Mountains as, thanks to Mrs. Frances Dana, we have for those of the Eastern States, and, thanks to Miss Mary Elizabeth Parsons, for those of California. The sego-lilies, looking like very handsome Eastern trilliums, were as plentiful as they were beautiful; and there were the striking Indian paint-brushes, fragrant purple-locust blooms, the blossoms of that strange bush the plumed acacia, delicately beautiful white columbines, bluebells, great sheets of blue lupin, and the tall, crowded spikes of the brilliant redbell—and innumerable others. The rainfall is light and the ground porous; springs are few, and brooks wanting; but the

trees are handsome. In a few places the forest is dense; in most places it is sufficiently open to allow a mountain horse to twist in and out among the tree trunks at a smart canter. The tall yellow pines are everywhere; the erect spires of the mountain-spruce and of the blue-tipped Western balsam shoot up around their taller cousins, and the quaking asps, the aspens with their ever-quivering leaves and glimmering white boles, are scattered among and beneath the conifers, or stand in groves by themselves. Blue grouse were plentiful—having increased greatly, partly because of the war waged by Uncle Jim against their foes the great horned owls; and among the numerous birds were long-crested, dark-blue jays, pinyon-jays, doves, band-tailed pigeons, golden-winged flickers, chickadees, juncos, mountain-bluebirds, thistle-finches, and Louisiana tanagers. A very handsome cock tanager, the orange-yellow of its plumage dashed with red on the head and throat, flew familiarly round Uncle Jim's cabin, and spent most of its time foraging in the grass. Once three birds flew by which I am convinced were the strange and interesting evening grosbeaks. Chipmunks and white-footed mice lived in the cabin, the former very bold and friendly; in fact, the chipmunks, of several species, were everywhere; and there were gophers or rock-squirrels, and small tree-squirrels, like the Eastern chickarees and big tree-squirrels—the handsomest squirrels I have ever seen—with black bodies and bushy white tails. These last lived in the pines, were diurnal in their habits, and often foraged among the fallen cones on the ground; and they were strikingly conspicuous.

We met, and were most favorably impressed by, the forest supervisor and some of his rangers. This

forest and game reserve is thrown open to grazing, as with all similar reserves. Among the real settlers, the home-makers of sense and far-sightedness, there is a growing belief in the wisdom of the policy of the preservation of the national resources by the national government. On small, permanent farms, the owner, if reasonably intelligent, will himself preserve his own patrimony; but everywhere the uncontrolled use in common of the public domain has meant reckless, and usually wanton, destruction. All the public domain that is used should be used under strictly supervised governmental lease; that is, the lease system should be applied everywhere substantially as it is now applied in the forest. In every case the small neighboring settlers, the actual home-makers, should be given priority of chance to lease the land in reasonable sized tracts. Continual efforts are made by demagogues and by unscrupulous agitators to excite hostility to the forest policy of the government; and needy men who are short-sighted and unscrupulous join in the cry, and play into the hands of the corrupt politicians who do the bidding of the big and selfish exploiters of the public domain. One device of these politicians is through their representatives in Congress to cut down the appropriation for the forest service; and in consequence the administrative heads of the service, in the effort to be economical, are sometimes driven to the expedient of trying to replace the permanently employed experts by short-term men, picked up at haphazard, and hired only for the summer season. This is all wrong: first, because the men thus hired give very inferior service; and, second, because the government should be a model employer, and should not set a vicious example in hiring men under conditions that

tend to create a shifting class of laborers who suffer from all the evils of unsteady employment, varied by long seasons of idleness. At this time the best and most thoughtful farmers are endeavoring to devise means for doing away with the system of employing farm-hands in mass for a few months and then discharging them; and the government should not itself have recourse to this thoroughly pernicious system.

The preservation of game and of wild life generally—aside from the noxious species—on these reserves is of incalculable benefit to the people as a whole. As the game increases in these national refuges and nurseries it overflows into the surrounding country. Very wealthy men can have private game-preserves of their own. But the average man of small or moderate means can enjoy the vigorous pastime of the chase, and indeed can enjoy wild nature, only if there are good general laws, properly enforced, for the preservation of the game and wild life, and if, furthermore, there are big parks or reserves provided for the use of all our people, like those of the Yellowstone, the Yosemite, and the Colorado.

A small herd of bison has been brought to the reserve; it is slowly increasing. It is privately owned, one-third of the ownership being in Uncle Jim, who handles the herd. The government should immediately buy this herd. Everything should be done to increase the number of bison on the public reservations.

The chief game animal of the Colorado Canyon reserve is the Rocky Mountain blacktail, or mule, deer. The deer have increased greatly in numbers since the reserve was created, partly because of the stopping of hunting by men, and even more because of the killing off of the cougars. The high plateau is their

summer range; in the winter the bitter cold and driving snow send them and the cattle, as well as the bands of wild horses, to the lower desert country. For some cause, perhaps the limestone soil, their antlers are unusually stout and large. We found the deer tame and plentiful, and as we rode or walked through the forest we continually came across them—now a doe with her fawn, now a party of does and fawns, or a single buck, or a party of bucks. The antlers were still in the velvet. Does would stand and watch us go by within fifty or a hundred yards, their big ears thrown forward; while the fawns stayed hid near by. Sometimes we roused the pretty spotted fawns, and watched them dart away, the embodiments of delicate grace. One buck, when a hound chased it, refused to run and promptly stood at bay; another buck jumped and capered, and also refused to run, as we passed at but a few yards' distance. One of the most beautiful sights I ever saw was on this trip. We were slowly riding through the open pine forest when we came on a party of seven bucks. Four were yearlings or two-year-olds; but three were mighty master-bucks, and their velvet-clad antlers made them look as if they had rocking-chairs on their heads. Stately of port and bearing, they walked a few steps at a time, or stood at gaze on the carpet of brown needles strewn with cones; on their red coats the flecked and broken sun-rays played; and as we watched them, down the aisles of tall tree trunks the odorous breath of the pines blew in our faces.

The deadly enemies of the deer are the cougars. They had been very plentiful all over the table-land until Uncle Jim thinned them out, killing between two and three hundred. Usually their lairs are made in the well-nigh inaccessible ruggedness of the canyon

itself. Those which dwelt in the open forest were soon killed off. Along the part of the canyon where we hunted there was usually an upper wall of sheer white cliffs; then came a very steep slope covered by a thick scrub of dwarf oak and locust, with an occasional pinyon or pine; and then another and deeper wall of vermilion cliffs. It was along this intermediate slope that the cougars usually passed the day. At night they came up through some gorge or break in the cliff and rambled through the forests and along the rim after the deer. They are the most successful of all still-hunters, killing deer much more easily than a wolf can; and those we killed were very fat.

Cougars are strange and interesting creatures. They are among the most successful and to their prey the most formidable beasts of rapine in the world. Yet when themselves attacked they are the least dangerous of all beasts of prey, except hyenas. Their every movement is so lithe and stealthy, they move with such sinuous and noiseless caution, and are such past masters in the art of concealment, that they are hardly ever seen unless roused by dogs. In the wilds they occasionally kill wapiti, and often bighorn sheep and white goats; but their favorite prey is the deer.

Among domestic animals, while they at times kill all, including, occasionally, horned cattle, they are especially destructive to horses. Among the first bands of horses brought to this plateau there were some of which the cougars killed every foal. The big males attacked full-grown horses. Uncle Jim had killed one big male which had killed a large draft-horse, and another which had killed two saddle-horses and a pack-mule, although the mule had a bell on its neck, which it was mistakenly supposed would keep

the cougar away. We saw the skeleton of one of the saddle-horses. It was killed when snow was on the ground, and when Uncle Jim first saw the carcass the marks of the struggle were plain. The cougar sprang on its neck, holding the face with the claws of one paw, while his fangs tore at the back of the neck, just at the base of the skull; the other fore paw was on the other side of the neck, and the hind claws tore the withers and one shoulder and flank. The horse struggled thirty yards or so before he fell, and never rose again. The draft-horse was seized in similar fashion. It went but twenty yards before falling; then in the snow could be seen the marks where it had struggled madly on its side, plunging in a circle, and the marks of the hind feet of the cougar in an outside circle, while the fangs and fore talons of the great cat never ceased tearing the prey. In this case the fore claws so ripped and tore the neck and throat that it was doubtful whether they, and not the teeth, had not given the fatal wounds.

We came across the bodies of a number of deer that had been killed by cougars. Generally the remains were in such condition that we could not see how the killing had been done. In one or two cases the carcasses were sufficiently fresh for us to examine them carefully. One doe had claw marks on her face, but no fang marks on the head or neck; apparently the neck had been broken by her own plunging fall; then the cougar had bitten a hole in the flank and eaten part of one haunch; but it had not disembowelled its prey, as an African lion would have done. Another deer, a buck, was seized in similar manner; but the death-wound was inflicted with the teeth, in singular fashion, a great hole being torn into the chest, where

the neck joins the shoulder. Evidently there is no settled and invariable method of killing. We saw no signs of any cougar being injured in the struggle; the prey was always seized suddenly and by surprise, and in such fashion that it could make no counter-attack.

Few African leopards would attack such quarry as the big male cougars do. Yet the leopard sometimes preys on man, and it is the boldest and most formidable of fighters when brought to bay. The cougar, on the contrary, is the least dangerous to man of all the big cats. There are authentic instances of its attacking man; but they are not merely rare but so wholly exceptional that in practice they can be entirely disregarded. There is no more need of being frightened when sleeping in, or wandering after nightfall through, a forest infested by cougars than if they were so many tom-cats. Moreover, when itself assailed by either dogs or men the cougar makes no aggressive fight. It will stay in a tree for hours, kept there by a single dog which it could kill at once if it had the heart—and this although if hungry it will itself attack and kill any dog, and on occasions even a big wolf. If the dogs —or men—come within a few feet, it will inflict formidable wounds with its claws and teeth, the former being used to hold the assailant while the latter inflict the fatal bite. But it fights purely on the defensive, whereas the leopard readily assumes the offensive and often charges, at headlong, racing speed, from a distance of fifty or sixty yards. It is absolutely safe to walk up to within ten yards of a cougar at bay, whether wounded or unwounded, and to shoot it at leisure.

Cougars are solitary beasts. When full grown the females outnumber the males about three to one; and

the sexes stay together for only a few days at mating-time. The female rears her kittens alone, usually in some cave; the male would be apt to kill them if he could get at them. The young are playful. Uncle Jim once brought back to his cabin a young cougar, two or three months old. At the time he had a hound puppy named Pot—he was an old dog, the most dependable in the pack, when we made our hunt. Pot had lost his mother; Uncle Jim was raising him on canned milk, and, as it was winter, kept him at night in a German sock. The young cougar speedily accepted Pot as a playmate, to be enjoyed and tyrannized over. The two would lap out of the same dish; but when the milk was nearly lapped up, the cougar would put one paw on Pot's face, and hold him firmly while it finished the dish itself. Then it would seize Pot in its fore paws and toss him up, catching him again; while Pot would occasionally howl dismally, for the young cougar had sharp little claws. Finally the cougar would tire of the play, and then it would take Pot by the back of the neck, carry him off, and put him down in his box by the German sock.

When we started on our cougar-hunt there were seven of us, with six pack-animals. The latter included one mule, three donkeys—two of them, Ted and Possum, very wise donkeys—and two horses. The saddle animals included two mules and five horses, one of which solemnly carried a cow-bell. It was a characteristic old-time Western outfit. We met with the customary misadventures of such a trip, chiefly in connection with our animals. At night they were turned loose to feed, most of them with hobbles, some of them with bells. Before dawn, two or three of the party—usually including one, and sometimes both, of

the elder boys—were off on foot, through the chilly dew, to bring them in. Usually this was a matter of an hour or two; but once it took a day, and twice it took a half-day. Both breaking camp and making camp, with a pack outfit, take time; and in our case each of the packers, including the two elder boys, used his own hitch—single-diamond, squaw hitch, cow-man's hitch, miner's hitch, Navajo hitch, as the case might be. As for cooking and washing dishes—why, I wish that the average tourist-sportsman, the city-hunter-with-a-guide, would once in a while have to cook and wash dishes for himself; it would enable him to grasp the reality of things. We were sometimes nearly drowned out by heavy rain-storms. We had good food; but the only fresh meat we had was the cougar meat. This was delicious; quite as good as venison. Yet men rarely eat cougar flesh.

Cougars should be hunted when snow is on the ground. It is difficult for hounds to trail them in hot weather, when there is no water and the ground is dry and hard. However, we had to do the best we could; and the frequent rains helped us. On most of the hunting days we rode along the rim of the canyon and through the woods, hour after hour, until the dogs grew tired or their feet sore, so that we deemed it best to turn toward camp; having either struck no trail or else a trail so old that the hounds could not puzzle it out. I did not have a rifle, wishing the boys to do the shooting. The two elder boys had tossed up for the first shot, Nick winning. In cougar-hunting the shot is usually much the least interesting and important part of the performance. The credit belongs to the hounds, and to the man who hunts the hounds. Uncle Jim hunted his hounds excellently. He had

neither horn nor whip; instead, he threw pebbles, with much accuracy of aim, at any recalcitrant dog—and several showed a tendency to hunt deer or coyote. "They think they know best and needn't obey me unless I have a nose-bag full of rocks," observed Uncle Jim.

Twice we had lucky days. On the first occasion we all seven left camp by sunrise with the hounds. We began with an hour's chase after a bobcat, which dodged back and forth over and under the rim rock, and finally escaped along a ledge in the cliff wall. At about eleven we struck a cougar trail of the night before. It was a fine sight to see the hounds running it through the woods in full cry, while we loped after them. After one or two checks, they finally roused the cougar, a big male, from a grove of aspens at the head of a great gorge which broke through the cliffs into the canyon. Down the gorge went the cougar, and then along the slope between the white cliffs and the red; and after some delay in taking the wrong trail, the hounds followed him. The gorge was impassable for horses, and we rode along the rim, looking down into the depths, from which rose the chiming of the hounds. At last a change in the sound showed that they had him treed; and after a while we saw them far below under a pine, across the gorge, and on the upper edge of the vermilion cliff wall. Down we went to them, scrambling and sliding; down a break in the cliffs, round the head of the gorge just before it broke off into a side canyon, through the thorny scrub which tore our hands and faces, along the slope where, if a man started rolling, he never would stop until life had left his body. Before we reached him the cougar leaped from the tree and tore off, with his

big tail stretched straight as a bar behind him; but a cougar is a short-winded beast, and a couple of hundred yards on, the hounds put him up another tree. Thither we went.

It was a wild sight. The maddened hounds bayed at the foot of the pine. Above them, in the lower branches, stood the big horse-killing cat, the destroyer of the deer, the lord of stealthy murder, facing his doom with a heart both craven and cruel. Almost beneath him the vermilion cliffs fell sheer a thousand feet without a break. Behind him lay the Grand Canyon in its awful and desolate majesty.

Nicholas shot true. With his neck broken, the cougar fell from the tree, and the body was clutched by Uncle Jim and Archie before it could roll over the cliff—while I experienced a moment's lively doubt as to whether all three might not waltz into the abyss together. Cautiously we dragged him along the rim to another tree, where we skinned him. Then, after a hard pull out of the canyon, we rejoined the horses; rain came on; and, while the storm pelted against our slickers and down-drawn slouch-hats, we rode back to our water-drenched camp.

On our second day of success only three of us went out—Uncle Jim, Archie, and I. Unfortunately, Quentin's horse went lame that morning, and he had to stay with the pack-train. For two or three hours we rode through the woods and along the rim of the canyon. Then the hounds struck a cold trail and began to puzzle it out. They went slowly along to one of the deep, precipice-hemmed gorges which from time to time break the upper cliff wall of the canyon; and after some busy nose-work they plunged into its depths. We led our horses to the bottom, slipping, sliding, and

pitching, and clambered, panting and gasping, up the other side. Then we galloped along the rim. Far below us we could at times hear the hounds. One of them was a bitch, with a squealing voice. The other dogs were under the first cliffs, working out a trail, which was evidently growing fresher. Much farther down we could hear the squealing of the bitch, apparently on another trail. However, the trails came together, and the shrill yelps of the bitch were drowned in the deeper-toned chorus of the other hounds, as the fierce intensity of the cry told that the game was at last roused. Soon they had the cougar treed. Like the first, it was in a pine at the foot of the steep slope, just above the vermilion cliff wall. We scrambled down to the beast, a big male, and Archie broke its neck; in such a position it was advisable to kill it outright, as, if it struggled at all, it was likely to slide over the edge of the cliff and fall a thousand feet sheer.

It was a long way down the slope, with its jungle of dwarf oak and locust, and the climb back, with the skin and flesh of the cougar, would be heart-breaking. So, as there was a break in the cliff line above, Uncle Jim suggested to Archie to try to lead down our riding-animals while he, Uncle Jim, skinned the cougar. By the time the skin was off, Archie turned up with our two horses and Uncle Jim's mule—an animal which galloped as freely as a horse. Then the skin and flesh were packed behind his and Uncle Jim's saddles, and we started to lead the three animals up the steep, nearly sheer mountainside. We had our hands full. The horses and mule could barely make it. Finally the saddles of both the laden animals slipped, and Archie's horse in his fright nearly went over the cliff—it was a favorite horse of his, a black horse from the

plains below, with good blood in it, but less at home climbing cliffs than were the mountain horses. On that slope anything that started rolling never stopped unless it went against one of the rare pine or pinyon trees. The horse plunged and reared; Archie clung to its head for dear life, trying to prevent it from turning downhill, while Uncle Jim sought to undo the saddle and I clutched the bridle of his mule and of my horse and kept them quiet. Finally the frightened black horse sank on his knees with his head on Archie's lap; the saddle was taken off—and promptly rolled downhill fifty or sixty yards before it fetched up against a pinyon; we repacked, and finally reached the top of the rim.

Meanwhile the hounds had again started, and we concluded that the bitch must have been on the trail of a different animal, after all. By the time we were ready to proceed they were out of hearing, and we completely lost track of them. So Uncle Jim started in the direction he deemed it probable they would take, and after a while we were joined by Pot. Evidently the dogs were tired and thirsty and had scattered. In about an hour, as we rode through the open pine forest across hills and valleys, Archie and I caught, very faintly, a far-off baying note. Uncle Jim could not hear it, but we rode toward the spot, and after a time caught the note again. Soon Pot heard it and trotted toward the sound. Then we came over a low hill crest, and when half-way down we saw a cougar crouched in a pine on the opposite slope, while one of the hounds, named Ranger, uttered at short intervals a husky bay as he kept his solitary vigil at the foot of the tree. Archie insisted that I should shoot, and thrust the rifle into my hand as we galloped down

the incline. The cougar, a young and active female, leaped out of the tree and rushed off at a gait that for a moment left both dogs behind; and after her we tore at full speed through the woods and over rocks and logs. A few hundred yards farther on her bolt was shot, and the dogs, and we also, were at her heels. She went up a pine which had no branches for the lower thirty or forty feet. It was interesting to see her climb. Her two fore paws were placed on each side of the stem and her hind paws against it, all the claws digging into the wood; her body was held as clear of the tree as if she had been walking on the ground, the legs being straight, and she walked or ran up the perpendicular stem with as much daylight between her body and the trunk as there was between her body and the earth when she was on the ground. As she faced us among the branches I could only get a clear shot into her chest where the neck joins the shoulder; down she came, but on the ground she jumped to her feet, ran fifty yards with the dogs at her heels, turned to bay in some fallen timber, and dropped dead.

The last days before we left this beautiful holiday region we spent on the table-land called Greenland, which projects into the canyon east of Bright Angel. We were camped by the Dripping Springs, in singular and striking surroundings. A long valley leads south through the table-land; and just as it breaks into a sheer walled chasm which opens into one of the side loops of the great canyon, the trail turns into a natural gallery along the face of the cliff. For a couple of hundred yards a rock shelf a dozen feet wide runs under a rock overhang which often projects beyond it. The gallery is in some places twenty feet high; in other places a man on horseback must stoop his head

as he rides. Then, at a point where the shelf broadens, the clear spring pools of living water, fed by constant dripping from above, lie on the inner side next to and under the rock wall. A little beyond these pools, with the chasm at our feet, and its opposite wall towering immediately in front of us, we threw down our bedding and made camp. Darkness fell; the stars were brilliant overhead; the fire of pitchy pine stumps flared; and in the light of the wavering flames the cliff walls and jutting rocks momentarily shone with ghastly clearness, and as instantly vanished in utter gloom.

From the southernmost point of this table-land the view of the canyon left the beholder solemn with the sense of awe. At high noon, under the unveiled sun, every tremendous detail leaped in glory to the sight; yet in hue and shape the change was unceasing from moment to moment. When clouds swept the heavens, vast shadows were cast; but so vast was the canyon that these shadows seemed but patches of gray and purple and umber. The dawn and the evening twilight were brooding mysteries over the dusk of the abyss; night shrouded its immensity, but did not hide it; and to none of the sons of men is it given to tell of the wonder and splendor of sunrise and sunset in the Grand Canyon of the Colorado.

II

ACROSS THE NAVAJO DESERT

We dropped down from Buckskin Mountain, from the land of the pine and spruce and of cold, clear springs, into the grim desolation of the desert. We drove the pack-animals and loose horses, usually one of us taking the lead to keep the trail. The foreman of the Bar Z had lent us two horses for our trip, in true cattleman's spirit; another Bar Z man, who with his wife lived at Lee's Ferry, showed us every hospitality, and gave us fruit from his garden, and chickens; and two of the Bar Z riders helped Archie and Nick shoe one of our horses. It was a land of wide spaces and few people, but those few we met were so friendly and helpful that we shall not soon forget them.

At noon of the first day we had come down the mountainside, from the tall northern forest trees at the summit, through the scattered, sprawling pinyons and cedars of the side slopes, to the barren, treeless plain of sand and sage-brush and greasewood. At the foot of the mountain we stopped for a few minutes at an outlying cow-ranch. There was not a tree, not a bush more than knee-high, on the whole plain round about. The bare little ranch-house, of stone and timber, lay in the full glare of the sun; through the open door we saw the cluttered cooking utensils and the rolls of untidy bedding. The foreman, rough and kindly, greeted us from the door; spare and lean, his eyes bloodshot and his face like roughened oak from the pitiless sun, wind, and sand of the desert. After we

had dismounted, our shabby ponies moped at the hitching-post as we stood talking. In the big corral a mob of half-broken horses were gathered, and two dust-grimed, hard-faced cow-punchers, lithe as panthers, were engaged in breaking a couple of wild ones. All around, dotted with stunted sage-brush and grease-wood, the desert stretched, blinding white in the sun-light; across its surface the dust clouds moved in pillars, and in the distance the heat-waves danced and wavered.

During the afternoon we shogged steadily across the plain. At one place, far off to one side, we saw a band of buffalo, and between them and us a herd of wild donkeys. Otherwise the only living things were snakes and lizards. On the other side of the plain, two or three miles from a high wall of vermilion cliffs, we stopped for the night at a little stone rest-house, built as a station by a cow outfit. Here there were big corrals, and a pool of water piped down by the cow-men from a spring many miles distant. On the sand grew the usual desert plants, and on some of the ridges a sparse growth of grass, sufficient for the night feed of the hardy horses. The little stone house and the corrals stood bare and desolate on the empty plain. Soon after we reached them a sand-storm rose and blew so violently that we took refuge inside the house. Then the wind died down; and as the sun sank toward the horizon we sauntered off through the hot, still evening. There were many sidewinder rattlesnakes. We killed several of the gray, flat-headed, venomous things; as we slept on the ground outside the house, under the open sky, we were glad to kill as many as possible, for they sometimes crawl into a sleeper's blankets. Except this baleful life, there was little save

the sand and the harsh, scanty vegetation. Across the lonely wastes the sun went down. The sharply channelled cliffs turned crimson in the dying light; all the heavens flamed ruby-red, and faded to a hundred dim hues of opal, beryl, and amber, pale turquoise and delicate emerald; and then night fell and darkness shrouded the desert.

Next morning the horse-wranglers, Nick and Quentin, were off before dawn to bring in the saddle and pack animals; the sun rose in burning glory, and through the breathless heat we drove the pack-train before us toward the crossing of the Colorado. Hour after hour we plodded ahead. The cliff line bent back at an angle, and we followed into the valley of the Colorado. The trail edged in toward the high cliffs as they gradually drew toward the river. At last it followed along the base of the frowning rock masses. Far off on our right lay the Colorado; on its opposite side the broad river-valley was hemmed in by another line of cliffs, at whose foot we were to travel for two days after crossing the river.

The landscape had become one of incredible wildness, of tremendous and desolate majesty. No one could paint or describe it save one of the great masters of imaginative art or literature—a Turner or Browning or Poe. The sullen rock walls towered hundreds of feet aloft, with something about their grim savagery that suggested both the terrible and the grotesque. All life was absent, both from them and from the fantastic barrenness of the boulder-strewn land at their bases. The ground was burned out or washed bare. In one place a little stream trickled forth at the bottom of a ravine, but even here no grass grew—only little clusters of a coarse weed with flaring white flowers

that looked as if it throve on poisoned soil. In the still heat "we saw the silences move by and beckon." The cliffs were channelled into myriad forms—battlements, spires, pillars, buttressed towers, flying arches; they looked like the ruined castles and temples of the monstrous devil-deities of some vanished race. All were ruins—ruins vaster than those of any structures ever reared by the hands of men—as if some magic city, built by warlocks and sorcerers, had been wrecked by the wrath of the elder gods. Evil dwelt in the silent places; from battlement to lonely battlement fiends' voices might have raved; in the utter desolation of each empty valley the squat blind tower might have stood, and giants lolled at length to see the death of a soul at bay.

As the afternoon wore on, storm boded in the south. The day grew sombre; to the desolation of the blinding light succeeded the desolation of utter gloom. The echoes of the thunder rolled among the crags, and lightning jagged the darkness. The heavens burst, and the downpour drove in our faces; then through cloud rifts the sun's beams shone again and we looked on "the shining race of rain whose hair a great wind scattereth."

At Lee's Ferry, once the home of the dark leader of the Danites, the cliffs, a medley of bold colors and striking forms, come close to the river's brink on either side; but at this one point there is a break in the canyon walls and a ferry can be run. A stream flows into the river from the north. By it there is a house, and the miracle of water has done its work. Under irrigation, there are fields of corn and alfalfa, groves of fruit-trees, and gardens; a splash of fresh, cool green in the harsh waste.

South of the ferry we found two mule-wagons, sent for us by Mr. Hubbell, of Ganado, to whose thoughtful kindness we owed much. One was driven by a Mexican, Francisco Marquez; the other, the smaller one, by a Navajo Indian, Loko, who acted as cook; both were capital men, and we lived in much comfort while with them. A Navajo policeman accompanied us as guide, for we were now in the great Navajo reservation. A Navajo brought us a sheep for sale, and we held a feast.

For two days we drove southward through the desert country, along the foot of a range of red cliffs. In places the sand was heavy; in others the ground was hard, and the teams made good progress. There were little water-holes, usually more or less alkaline, ten or fifteen miles apart. At these the Navajos were watering their big flocks of sheep and goats, their horses and donkeys, and their few cattle. They are very interesting Indians. They live scattered out, each family by itself, or two or three families together; not in villages, like their neighbors the Hopis. They are pastoral Indians, but they are agriculturists also, as far as the desert permits. Here and there, where there was a little seepage of water, we saw their meagre fields of corn, beans, squashes, and melons. All were mounted; the men usually on horses, the women and children often on donkeys. They were clad in white man's garb; at least the men wore shirts and trousers and the women bodices and skirts; but the shirts were often green or red or saffron or bright blue; their long hair was knotted at the back of the head, and they usually wore moccasins. The well-to-do carried much jewelry of their own make. They wore earrings and necklaces of turquoise; turquoises were set in their

many silver ornaments; and they wore buttons and bangles of silver, for they are cunning silversmiths, as well as weavers of the famous Navajo blankets. Although they practise polygamy, and divorce is easy, their women are usually well treated; and we saw evidences of courtesy and consideration not too common even among civilized people. At one halt a woman on a donkey, with a little boy behind her, rode up to the wagon. We gave her and the boy food. Later when a Navajo man came up, she quietly handed him a couple of delicacies. So far there was nothing of note; but the man equally quietly and with a slight smile of evident gratitude and appreciation stretched out his hand; and for a moment they stood with clasped hands, both pleased, one with the courtesy, and the other with the way the courtesy had been received. Both were tattered beings on donkeys; but it made a pleasant picture.

These are as a whole good Indians—although some are very bad, and should be handled rigorously. Most of them work hard, and wring a reluctant living from the desert; often their houses are miles from water, and they use it sparingly. They live on a reservation in which many acres are necessary to support life; I do not believe that at present they ought to be allotted land in severalty; and their whole reservation should be kept for them, if only they can be brought forward fast enough in stock-raising and agriculture to use it, for with Indians and white men alike it is use which should determine occupancy of the soil. The Navajos have made progress of a real type, and stand far above mere savagery; and everything possible should be done to help them help themselves, to teach them English, and, above all, to teach them how to be better stock-

raisers and food-growers—as well as smiths and weavers —in their desert home. The whites have treated these Indians well. They benefited by the coming of the Spaniards; they have benefited more by the coming of our own people. For the last quarter of a century the lawless individuals among them have done much more wrong (including murder) to the whites than has been done to them by lawless whites. The lawless Indians are the worst menace to the others among the Navajos and Utes; and very serious harm has been done by well-meaning Eastern philanthropists who have encouraged and protected these criminals. I have known some startling cases of this kind.

During the second day of our southward journey the Painted Desert, in gaudy desolation, lay far to our right; and we crossed tongues and patches of the queer formation, with its hard, bright colors. Red and purple, green and bluish, orange and gray and umber brown, the streaked and splashed clays and marls had been carved by wind and weather into a thousand outlandish forms. Funnel-shaped sand-storms moved across the waste. We climbed gradually upward to the top of the mesa. The yellow sand grew heavier and deeper. There were occasional short streams from springs; but they ran in deep gullies, with nothing to tell of their presence; never a tree near by and hardly a bush or a tuft of grass, unless planted and tended by man. We passed the stone walls of an abandoned trading-post. The desert had claimed its own. The ruins lay close to a low range of cliffs; the white sand, dazzling under the sun, had drifted everywhere; there was not a plant, not a green thing in sight—nothing but the parched and burning lifelessness of rock and sand. This northern Arizona desert was less attractive than

the southern desert along the road to the Roosevelt Dam and near Mesa, for instance; for in the south the cactus growth is infinitely varied in size and in fantastic shape.

In the late afternoon we reached Tuba, with its Indian school and its trader's store. Tuba was once a Mormon settlement, the Mormons having been invited thither by the people of a near-by Hopi village—which we visited—because the Hopis wished protection from hostile Indian foes. As usual, the Mormon settlers had planted and cared for many trees—cottonwoods, poplars, almond, and flowering acacias—and the green shade was doubly attractive in that sandy desert. We were most hospitably received, especially by the school superintendent, and also by the trader. They showed us every courtesy. Mentioning the abandoned trading-post in the desert to the wife of the trader, she told us that it was there she had gone as a bride. The women who live in the outposts of civilization have brave souls!

We rested the horses for a day, and then started northward, toward the trading-station of John Wetherill, near Navajo Mountain and the Natural Bridge. The first day's travel was through heavy sand and very tiring to the teams. Late in the afternoon we came to an outlying trader's store, on a sandy hillside. In the plain below, where not a blade of grass grew, were two or three permanent pools; and toward these the flocks of the Navajos were hurrying, from every quarter, with their herdsmen. The sight was curiously suggestive of the sights I so often saw in Africa, when the Masai and Samburu herdsmen brought their flocks to water. On we went, not halting until nine in the evening.

All next day we travelled through a parched, monotonous landscape, now and then meeting Navajos with their flocks and herds, and passing by an occasional Navajo "hogan," or hovel-like house, with its rough corral near by. Toward evening we struck into Marsh Pass, and camped at the summit. Here we were again among the mountains; and the great gorge was wonderfully picturesque—well worth a visit from any landscape-lover, were there not so many sights still more wonderful in the immediate neighborhood. The lower rock masses were orange-hued, and above them rose red battlements of cliff; where the former broke into sheer sides there were old houses of the cliff-dwellers, carved in the living rock. The half-moon hung high overhead; the scene was wild and lovely, when we strolled away from the camp-fire among the scattered cedars and pinyons through the cool, still night.

Next morning we journeyed on, and in the forenoon we reached Kayentay, where John Wetherill, the guide and Indian trader, lives. We had been travelling over a bare table-land, through surroundings utterly desolate; and with startling suddenness, as we dropped over the edge, we came on the group of houses—the store, the attractive house of Mr. and Mrs. Wetherill, and several other buildings. Our new friends were the kindest and most hospitable of hosts, and their house was a delight to every sense: clean, comfortable, with its bath and running water, its rugs and books, its desks, cupboards, couches, and chairs, and the excellent taste of its Navajo ornamentation. Here we parted with our two wagons, and again took to pack-trains; we had already grown attached to Francisco and Loko, and felt sorry to say good-by to them.

On August 10, under Wetherill's guidance, we started

for the Natural Bridge, seven of us, all told, with five pack-horses. We travelled light, with no tentage, and when it rained at night we curled up in our bedding under our slickers. I was treated as "the Colonel," and did nothing but look after my own horse and bedding, and usually not even this much; but every one else in the outfit worked! On the two days spent in actually getting into and out of the very difficult country around the Bridge itself we cut down our luggage still further, taking the necessary food in the most portable form, and, as regards bedding, trusting, in cowboy fashion, to our slickers and horse-blankets. But we were comfortable, and the work was just hard enough to keep us in fine trim.

We began by retracing our steps to the head of Marsh Pass and turning westward up Laguna Canyon. This was so named because it contained pools of water when, half a century ago, Kit Carson, the type of all that was best among the old-style mountain-man and plainsman, traversed it during one of his successful Indian campaigns. The story of the American advance through the Southwest is filled with feats of heroism. Yet, taking into account the means of doing the work, even greater dangers were fronted, even more severe hardships endured, and even more striking triumphs achieved by the soldiers and priests who three centuries previously, during Spain's brief sunburst of glory, first broke through the portals of the thirst-guarded, Indian-haunted desert.

At noon we halted in a side canyon, at the foot of a mighty cliff, where there were ruins of a big village of cliff-dwellers. The cliff was of the form so common in this type of rock formation. It was not merely sheer, but re-entrant, making a huge, arched, shallow cave,

several hundred feet high, and at least a hundred—perhaps a hundred and fifty—feet deep, the overhang being enormous. The stone houses of the village, which in all essentials was like a Hopi village of to-day, were plastered against the wall in stories, each resting on a narrow ledge. Long poles permitted one to climb from ledge to ledge, and gave access, through the roofs, to the more inaccessible houses. The immense size of the cave—or overhanging, re-entrant cliff, whichever one chooses to call it—dwarfed the houses, so that they looked like toy houses.

There were many similar, although smaller, villages and little clusters of houses among the cliffs of this tangle of canyons. Once the cliff-dwellers had lived in numbers in this neighborhood, sleeping in their rock aeries, and venturing into the valleys only to cultivate their small patches of irrigated land. Generations had passed since these old cliff-dwellers had been killed or expelled. Compared with the neighboring Indians, they had already made a long stride in cultural advance when the Spaniards arrived; but they were shrinking back before the advance of the more savage tribes. Their history should teach the lesson—taught by all history in thousands of cases, and now being taught before our eyes by the experience of China, but being taught to no purpose so far as concerns those ultra-peace advocates whose heads are even softer than their hearts—that the industrious race of advanced culture and peaceful ideals is lost unless it retains the power not merely for defensive but for offensive action, when itself menaced by vigorous and aggressive foes.

That night, having ridden only some twenty-five miles, we camped in Bubbling Spring Valley. It would be hard to imagine a wilder or more beautiful spot;

if in the Old World, the valley would surely be celebrated in song and story; here it is one among many others, all equally unknown. We camped by the bubbling spring of pure cold water from which it derives its name. The long, winding valley was carpeted with emerald green, varied by wide bands and ribbons of lilac, where the tall ranks of bee-blossoms, haunted by humming-birds, grew thickly, often for a quarter of a mile at a stretch. The valley was walled in by towering cliffs, a few of them sloping, most of them sheer-sided or with the tops overhanging; and there were isolated rock domes and pinnacles. As everywhere round about, the rocks were of many colors, and the colors varied from hour to hour, so that the hues of sunrise differed from those of noonday, and yet again from the long lights of sunset. The cliffs seemed orange and purple; and again they seemed vermilion and umber; or in the white glare they were white and yellow and light red.

Our routine was that usual when travelling with a pack-train. By earliest dawn the men whose duties were to wrangle the horses and cook had scrambled out of their bedding; and the others soon followed suit. There is always much work with a pack outfit, and there are almost always some animals which cause trouble when being packed. The sun was well up before we started; then we travelled until sunset, taking out a couple of hours to let the hobbled horses and mules rest and feed at noon.

On the second day out we camped not far from the foot of Navajo Mountain. We came across several Indians, both Navajos and Utes, guarding their flocks and herds; and we passed by several of their flimsy branch-built summer houses, and their mud, stone, and log winter houses; and by their roughly fenced fields

of corn and melons watered by irrigation ditches. Wetherill hired two Indians, a Ute and a Navajo, to go with us, chiefly to relieve us of the labor of looking after our horses at night. They were pleasant-faced, silent men. They wore broad hats, shirts and waistcoats, trousers, and red handkerchiefs loosely knotted round their necks; except for their moccasins, a feather in each hat, and two or three silver ornaments, they were dressed like cowboys, and both picturesquely and appropriately. Their ornamented saddles were of Navajo make.

The second day's march was long. At one point we dropped into and climbed out of a sheer-sided canyon some twelve hundred feet deep. The trail, which zigzagged up and down the rocky walls, had been made by the Navajos. After we had led our horses down into the canyon, and were lunching by a spring, we were followed by several Indians driving large flocks of goats and sheep. They came down the trail at a good rate, many of them riding instead of leading their horses. One rather comely squaw attracted our attention. She was riding a weedy, limber-legged broodmare, followed by a foal. The mare did not look as if it would be particularly strong even on the level; yet the well-dressed squaw, holding before her both her baby and her long sticks for blanket-weaving, and with behind her another child and a small roll of things which included a black umbrella, ambled down among the broken rocks with entire unconcern, and joked cheerily with us as she passed.

The night was lovely, and the moon, nearly full, softened the dry harshness of the land, while Navajo Mountain loomed up under it. When we rose, we saw the pale dawn turn blood-red; and shortly after sunrise

we started for our third and final day's journey to the Bridge. For some ten miles the track was an ordinary rough mountain trail. Then we left all our pack-animals except two little mules, and began the hard part of our trip. From this point on, the trail was that followed by Wetherill on his various trips to the Bridge, and it can perhaps fairly be called dangerous in two or three places, at least for horses. Wetherill has been with every party that has visited the Bridge from the time of its discovery by white men four years ago. On that occasion he was with two parties, their guide being the Ute who was at this time with us. Mrs. Wetherill has made an extraordinarily sympathetic study of the Navajos and to a less extent of the Utes; she knows and feelingly understands their traditions and ways of thought, and speaks their tongue fluently; and it was she who first got from the Indians full knowledge of the Bridge.

The hard trail began with a twenty minutes' crossing of a big mountain dome of bare sheet rock. Over this we led our horses, up, down, and along the sloping sides, which fell away into cliffs that were scores and even hundreds of feet deep. One spot was rather ticklish. We led the horses down the rounded slope to where a crack or shelf six or eight inches broad appeared and went off level to the right for some fifty feet. For half a dozen feet before we dropped down to this shelf the slope was steep enough to make it difficult for both horses and men to keep their footing on the smooth rock; there was nothing whatever to hold on to, and a precipice lay underneath.

On we went, under the pitiless sun, through a contorted wilderness of scalped peaks and ranges, barren passes, and twisted valleys of sun-baked clay. We

worked up and down steep hill slopes, and along tilted masses of sheet rock ending in cliffs. At the foot of one of these lay the bleached skeleton of a horse. It was one which Wetherill had ridden on one of his trips to the Bridge. The horse lost his footing on the slippery slide rock, and went to his death over the cliff; Wetherill threw himself out of the saddle and just managed to escape. The last four miles were the worst of all for the horses. They led along the bottom of the Bridge canyon. It was covered with a torrent-strewn mass of smooth rocks, from pebbles to boulders of a ton's weight. It was a marvel that the horses got down without breaking their legs; and the poor beasts were nearly worn out.

Huge and bare the immense cliffs towered, on either hand, and in front and behind as the canyon turned right and left. They lifted straight above us for many hundreds of feet. The sunlight lingered on their tops; far below, we made our way like pigmies through the gloom of the great gorge. As we neared the Bridge the horse trail led up to one side, and along it the Indians drove the horses; we walked at the bottom of the canyon so as to see the Bridge first from below and realize its true size; for from above it is dwarfed by the immense mountain masses surrounding it.

At last we turned a corner, and the tremendous arch of the Bridge rose in front of us. It is surely one of the wonders of the world. It is a triumphal arch rather than a bridge, and spans the torrent bed in a majesty never shared by any arch ever reared by the mightiest conquerors among the nations of mankind. At this point there were deep pools in the rock bed of the canyon, with overhanging shelves under which grew beautiful ferns and hanging plants. Hot and tired,

we greeted the chance for a bath, and as I floated on my back in the water the Bridge towered above me. Then we made camp. We built a blazing fire under one of the giant buttresses of the arch, and the leaping flame brought it momentarily into sudden relief. We white men talked and laughed by the fire, and the two silent Indians sat by and listened to us. The night was cloudless. The round moon rose under the arch and flooded the cliffs behind us with her radiance. After she passed behind the mountains the heavens were still brilliant with starlight, and whenever I waked I turned and gazed at the loom of the mighty arch against the clear night sky.

Next morning early we started on our toilsome return trip. The pony trail led under the arch. Along this the Ute drove our pack-mules, and as I followed him I noticed that the Navajo rode around outside. His creed bade him never pass under an arch, for the arch is the sign of the rainbow, the sign of the sun's course over the earth, and to the Navajo it is sacred. This great natural bridge, so recently "discovered" by white men, has for ages been known to the Indians. Near it, against the rock walls of the canyon, we saw the crumbling remains of some cliff-dwellings, and almost under it there is what appears to be the ruin of a very ancient shrine.

We travelled steadily at a good gait, and we feasted on a sheep we bought from a band of Utes. Early on the afternoon of the sixth day of our absence we again rode our weary horses over the hill slope down to the store at Kayentay, and glad we were to see the comfortable ranch buildings.

Many Navajos were continually visiting the store. It seems a queer thing to say, but I really believe

Kayentay would be an excellent place for a summer school of archæology and ethnology. There are many old cliff-dwellings, some of large size and peculiar interest, in the neighborhood; and the Navajos of this region themselves, not to mention the village-dwelling Hopis, are Indians who will repay the most careful study, whether of language, religion, or ordinary customs and culture. As always when I have seen Indians in their homes, in mass, I was struck by the wide cultural and intellectual difference among the different tribes, as well as among the different individuals of each tribe, and both by the great possibilities for their improvement and by the need of showing common sense even more than good intentions if this improvement is to be achieved. Some Indians can hardly be moved forward at all. Some can be moved forward both fast and far. To let them entirely alone usually means their ruin. To interfere with them foolishly, with whatever good intentions, and to try to move all of them forward in a mass, with a jump, means their ruin. A few individuals in every tribe, and most of the individuals in some tribes, can move very far forward at once; the non-reservation schools do excellently for these. Most of them need to be advanced by degrees; there must be a half-way house at which they can halt, or they may never reach their final destination and stand on a level with the white man.

The Navajos have made long strides in advance during the last fifty years, *thanks to the presence of the white men in their neighborhood.* Many decent men have helped them—soldiers, agents, missionaries, traders; and the help has quite as often been given unconsciously as consciously; and some of the most conscientious efforts to help them have flatly failed.

The missionaries have made comparatively few converts; but many of the missionaries have added much to the influences telling for the gradual uplift of the tribe. Outside benevolent societies have done some good work at times, but have been mischievous influences when guided by ignorance and sentimentality—a notable instance on this Navajo reservation is given by Mr. Leupp in his book "The Indian and His Problem." Agents and other government officials, when of the best type, have done most good, and when not of the right type have done most evil; and they have never done any good at all when they have been afraid of the Indians or have hesitated relentlessly to punish Indian wrong-doers, even if these wrong-doers were supported by some unwise missionaries or ill-advised Eastern benevolent societies. The traders of the right type have rendered genuine and ill-appreciated service, and their stores and houses are centres of civilizing influence.

Good work can be done, and has been done, at the schools. Wherever the effort is to jump the ordinary Indian too far ahead and yet send him back to the reservation, the result is usually failure. To be useful the steps for the ordinary boy or girl, in any save the most advanced tribes, must normally be gradual. Enough English should be taught to enable such a boy or girl to read, write, and cipher so as not to be cheated in ordinary commercial transactions. Outside of this the training should be industrial, and, among the Navajos, it should be *the kind of industrial training which shall avail in the home cabins and in tending flocks and herds and irrigated fields.* The Indian should be encouraged to build a better house; but the house must not be too different from his present dwelling,

or he will, *as a rule*, neither build it nor live in it. The boy should be taught what will be of actual use to him among his fellows, and not what might be of use to a skilled mechanic in a big city, who can work only with first-class appliances; and the agency farmer should strive steadily to teach the young men out in the field how to better their stock and practically to increase the yield of their rough agriculture. The girl should be taught domestic science, not as it would be practised in a first-class hotel or a wealthy private home, but as she must practise it in a hut with no conveniences, and with intervals of sheep-herding. If the boy and girl are not so taught, their after-lives will normally be worthless both to themselves and to others. If they are so taught, they will normally themselves rise and will be the most effective of home missionaries for their tribe.

In Horace Greeley's "Overland Journey," published more than half a century ago, there are words of sound wisdom on this subject. Said Greeley (I condense): "In future efforts to improve the condition of the Indians the women should be specially regarded and appealed to. A conscientious, humane, capable Christian trader, with a wife thoroughly skilled in household manufactures and handicrafts, each speaking the language of the tribe with whom they take up their residence, can do [incalculable] good. Let them keep and sell whatever articles are adapted to the Indians' needs . . . and maintain an industrial school for Indian women and children, which, though primarily industrial, should impart intellectual and religious instruction also, wisely adapted in character and season to the needs of the pupils. . . . Such an enterprise would *gradually* [the italics here are mine] mould

a generation after its own spirit. . . . The Indian likes bread as well as the white; he must be taught to prefer the toil of producing it to the privation of lacking it." Mrs. Wetherill is doing, and striving to do, much more than Horace Greeley held up as an ideal. One of her hopes is to establish a "model hogan," an Indian home, both advanced and possible for the Navajos now to live up to—a half-way house on the road to higher civilization, a house in which, for instance, the Indian girl will be taught to wash in a tub with a pail of water heated at the fire; it is utterly useless to teach her to wash in a laundry with steam and cement bathtubs and expect her to apply this knowledge on a reservation. I wish some admirer of Horace Greeley and friend of the Indian would help Mrs. Wetherill establish her half-way house.

Mrs. Wetherill was not only versed in archæological lore concerning ruins and the like, she was also versed in the yet stranger and more interesting archæology of the Indian's own mind and soul. There have of recent years been some admirable books published on the phase of Indian life which is now, after so many tens of thousands of years, rapidly drawing to a close. There is the extraordinary, the monumental work of Mr. E. S. Curtis, whose photographs are not merely photographs, but pictures of the highest value; the capital volume by Miss Natalie Curtis; and others. If Mrs. Wetherill could be persuaded to write on the mythology of the Navajos, and also on their present-day psychology—by which somewhat magniloquent term I mean their present ways and habits of thought —she would render an invaluable service. She not only knows their language, she knows their minds; she has the keenest sympathy not only with their

bodily needs, but with their mental and spiritual processes; and she is not in the least afraid of them or sentimental about them when they do wrong. They trust her so fully that they will speak to her without reserve about those intimate things of the soul which they will never even hint at if they suspect want of sympathy or fear ridicule. She has collected some absorbingly interesting reproductions of the Navajo sand drawings, picture representations of the old mythological tales; they would be almost worthless unless she wrote out the interpretation told her by the medicine-man, for the hieroglyphics themselves would be meaningless without such translation. According to their own creed, the Navajos are very devout, and pray continually to the gods of their belief. Some of these prayers are very beautiful; others differ but little from forms of mere devil-worship, of propitiation of the powers of possible evil. Mrs. Wetherill was good enough to write out for me, in the original and in English translation, a prayer of each type—a prayer to the God of the Dawn and the Goddess of Evening Light, and a prayer to the great Spirit Bear. They run as follows:

PRAYER TO THE DAWN

"Hi-yol-cank sil-kin Natany,
Tee gee hozhone nas-shad,
Sit-sigie hozhone nas-shad
She-kayge hozhone nas-shad,
She-yage hozhone nas-shad,
She-kigee hozhone nas-shad,
She-now also hozhone nas-shad.

"San-naga, Toddetenie Huskie be-kay,
hozhone nas-shad,
Na-da-cleas, gekin, Natany,

Tes-gee hozhone nas-shad
She-kayge hozhone nas-shad,
She-kige hozhone nas-shad,
She-yage hozhone nas-shad,
She-now also hozhone nas-shad.

"Hozhone nas clee, hozhone nas clee,
Hozhone nas clee, hozhone nas clee."

PRAYER TO THE DAWN

(TRANSLATION)

"Dawn, beautiful dawn, the Chief,
This day, let it be well with me as I go;
Let it be well before me as I go;
Let it be well behind me as I go;
Let it be well beneath me as I go;
Let it be well above me as I go;
Let all I see be well as I go.

"Everlasting, like unto the Pollen Boy;
Goddess of the Evening, the beautiful Chieftess,
This day, let it be well with me as I go;
Let it be well before me as I go;
Let it be well behind me as I go;
Let it be well beneath me as I go;
Let it be well above me as I go;
Let all I see be well as I go.

"Now all is well, now all is well,
Now all is well, now all is well."

(The Navajos believe in repeating a prayer, both in anticipatory and in realized form, four times, being firm in the faith that an adjuration four times repeated will bring the results they desire; the Pollen Boy is the God of Fertilization of the Flowers.)

Prayer to the Big Black Bear

"Shush-et-so-dilth-kilth
Pash dilth-kilth ne-kay ba-she-che-un-de-de-talth;
Pash dilth-kilth ne-escla ba she chee un-de-de-talth;
Pash dilth-kilth ne-ea ba she chee un-de-de-talth;
Pash dilth-kilth ne-cha ba she chee un-de-de-talth;
Ba ne un-ne-ga ut-sen-el-clish; net saw now-o-tilth a
Sit saw now-o-tilth go-ud-dish-nilth;
Ba sit saw ne-egay go-ud-dish-nilth;
Ne change nis-salth dodo ne;
Ne change nis-salth do-ut-saw-daw;
Ne change nis-salth ta-de-tenie nus-cleango-ud-is-nilth;
es-ze, es-ze, es-ze, es-ze."

Prayer to the Big Black Bear

(translation)

"Big Black Bear,
With your black moccasins, like unto a knife, stand between me and danger;
With your black leggins, like unto a knife, stand between me and danger;
With your black shirt, like unto a knife, stand between me and danger,
With your black hat, like unto a knife, stand between me and danger;
With your charm send the lightning around you and around me;
By my charm tell the evil dream to leave me;
Let the evil dream not come true;
Give me medicine to dispel the evil dream;
The evil has missed me, the evil has missed me, the evil has missed me, the evil has missed me."

(The fourfold repetition of "the evil has missed me" is held to insure the accomplishment in the future of what the prayer asserts of the past. Instead of "hat" we could say "helmet," as the Navajos once wore a black buckskin helmet; and the knife was of black

flint. Black was the war color. This prayer was to ward off the effect of a bad dream.)

On August 17 we left Wetherill's with our pack-train, for a three days' trip across the Black Mesa to Walpi, where we were to witness the snake-dance of the Hopis. The desert valley where Kayentay stands is bounded on the south by a high wall of cliffs, extending for scores of miles. Our first day's march took us up this; we led the saddle-horses and drove the pack-animals up a very rough Navajo trail which zigzagged to the top through a partial break in the continuous rock wall. From the summit we looked back over the desert, barren, desolate, and yet with a curious fascination of its own. In the middle distance rose a line of low cliffs, deep red, well-nigh blood-red, in color. In the far distance isolated buttes lifted daringly against the horizon; prominent among them was the abrupt pinnacle known as El Capitan, a landmark for the whole region.

On the summit we were once more among pines, and we saw again the beautiful wild flowers and birds we had left on Buckskin Mountain. There were redbells and bluebells and the showy Indian paint-brushes; delicate white flowers and beautiful purple ones; rabbit-brush tipped with pale yellow, and the brighter yellow of the Navajo gorse; and innumerable others. I saw a Louisiana tanager; the pinyon-jays were everywhere; ravens, true birds of the wilderness, croaked hoarsely.

From the cliff crest we travelled south through a wild and picturesque pass. The table-land was rugged and mountainous; but it sloped gradually to the south, and the mountains changed to rounded hills. It was

a dry region, but with plenty of grama-grass, and much of it covered with an open forest of pinyon and cedar. After eight hours' steady jogging along Indian trails, and across country where there was no trail, we camped by some muddy pools of rain-water which lay at the bottom of a deep washout. Soon afterward a Navajo family passed camp; they were travelling in a wagon drawn by a mule and a horse, and the boys of the family were driving a big herd of sheep and goats. The incident merely illustrated the real progress the Indians are making, and how far they already are from pure savagery.

Next morning the red dawn and the flushed clouds that heralded the sunrise were very lovely. Only those who live and sleep in the open, fully realize the beauty of dawn and moonlight and starlight. As we journeyed southward the land grew more arid; and the water was scarce and bad. In the afternoon we camped on a dry mud-flat, not far from a Navajo sheep-farmer, who soon visited us. Two Navajos were travelling with us; merry, pleasant fellows. One of them had a .22 Winchester rifle, with which he shot a couple of prairie-dogs—which he and his friend roasted whole for their supper, having previously shared ours.

Next day at noon we climbed the steep, narrow rock ridge on whose summit rise the three Hopi towns at one of which, Walpi, the snake-dance was to be held. The clustered rock villages stood in bold outline, on the cliff top, against the blue sky. In all America there is no more strikingly picturesque sight.

III

THE HOPI SNAKE-DANCE

On our trip we not only traversed the domains of two totally different and very interesting and advanced Indian tribes, but we also met all sorts and conditions of white men. One of the latter, by the way, related an anecdote which delighted me because of its unexpected racial implications. The narrator was a Mormon, the son of an English immigrant. He had visited Belgium as a missionary. While there he went to a theatre to hear an American negro minstrel troupe; and, happening to meet one of the minstrels in the street, he hailed him with "Halloo, Sam!" to which the pleased and astonished minstrel cordially responded: "Well, for de Lawd's sake! Who'd expect to see a white man in this country?"

I did not happen to run across any Mormons at the snake-dance; but it seemed to me that almost every other class of Americans was represented—tourists, traders, cattlemen, farmers, government officials, politicians, cowboys, scientists, philanthropists, all kinds of men and women. We were especially glad to meet the assistant commissioner of Indian affairs, Mr. Abbot, one of the most useful public servants in Uncle Sam's employ. Mr. Hubbell, whose courtesy toward us was unwearied, met us; and we owed our comfortable quarters to the kindness of the Indian agent and his assistant. As I rode in I was accosted by Miss Natalie Curtis, who has done so very much to give to Indian culture its proper position. Miss Curtis's purpose has

been to preserve and perpetuate all the cultural development to which the Indian has already attained—in art, music, poetry, or manufacture—and, moreover, to endeavor to secure the further development and adaptation of this Indian culture so as to make it, what it can undoubtedly be made, an important constituent element in our national cultural development.

Among the others at the snake-dance was Geoffrey O'Hara, whom Secretary of the Interior Lane has wisely appointed instructor of native Indian music. Mr. O'Hara's purpose is to perpetuate and develop the wealth of Indian music and poetry—and ultimately the rhythmical dancing that goes with the music and poetry. The Indian children already know most of the poetry, with its peculiarly baffling rhythm. Mr. O'Hara wishes to appoint special Indian instructors of this music, carefully chosen, in the schools; as he said: "If the Navajo can bring with him into civilization the ability to preserve his striking and bewildering rhythm, he will have done in music what Thorpe, the Olympic champion, did in athletics." Miss Curtis and Mr. O'Hara represent the effort to perpetuate Indian art in the life of the Indian to-day, not only for his sake, but for our own. This side of Indian life is entirely unrevealed to most white men; and there is urgent need from the standpoint of the white man himself of a proper appreciation of native art. Such appreciation may mean much toward helping the development of an original American art for our whole people.

No white visitor to Walpi was quite as interesting as an Indian visitor, a Navajo who was the owner and chauffeur of the motor in which Mr. Hubbell had driven to Walpi. He was an excellent example of the

Indian who ought to be given the chance to go to a non-reservation school—a class not perhaps as yet relatively very large, but which will grow steadily larger. He had gone to such a school; and at the close of his course had entered the machine-shops of the Santa Fé and Northeastern Railway—I think that was the name of the road—staying there four years, joining the local union, going out with the other men when they struck, and having in all ways precisely the experience of the average skilled mechanic. Then he returned to the reservation, where he is now a prosperous merchant, running two stores; and he purchased his automobile as a matter of convenience and of economy in time, so as to get quickly from one store to the other, as they are far apart. He is not a Christian, nor is his wife; but his children have been baptized in the Catholic Church. Of course such a prosperous career is exceptional for an Indian, as it would be exceptional for a white man; but there were Hopi Indians whom we met at the dance, both storekeepers and farmers, whose success had been almost as great. Among both the Navajos and Hopis the progress has been marked during the last thirty or forty years, and is more rapid now than ever before, and careers such as those just mentioned will in their essence be repeated again and again by members of both tribes in the near future. The Hopis are so far advanced that most of them can now fully profit by non-reservation schools. For large sections of the Navajos the advance must be slower. For these the agency school is the best school, and their industrial training should primarily be such as will fit them for work in their own homes, and for making these homes cleaner and better.

Of course the advance in any given case is apt to

be both fitful and one-sided—the marvel is that it is not more so. Moreover, the advance is sometimes taking place when there seems dishearteningly little evidence of it. I have never respected any men or women more than some of the missionaries and their wives—there were examples on the Navajo reservation—who bravely and uncomplainingly labor for righteousness, although knowing that the visible fruits of their labor will probably be gathered by others in a later generation. These missionaries may fail to make many converts at the moment, and yet they may unconsciously produce such an effect that the men and women who themselves remain heathen are rather pleased to have their children become Christians. I have in mind, as illustrating just what I mean, one missionary family on the Navajo reservation whom it was an inspiration to meet; and, by the way, the Christian Navajo interpreter at their mission, with his pretty wife and children, gave fine proof of what the right education can do for the Indian.

Among those at the snake-dance was a Franciscan priest, who has done much good work on the Navajo reservation. He has attained great influence with the Navajos because of his work for their practical betterment. He doesn't try to convert the adults; but he has worked with much success among the children. Like every competent judge I met, he strongly protested against opening or cutting down the Navajo reservation. I heartily agree with him. Such an act would be a cruel wrong, and would benefit only a few wealthy cattle and sheep men.

There has apparently been more missionary success among the adult Hopis than among the adult Navajos; at any rate, I came across a Baptist congregation of

some thirty members, and from information given me I am convinced that these converts stood in all ways ahead of their heathen brethren. Exceptional qualities of courage, hard-headed common sense, sympathy, and understanding are needed by the missionary who is to do really first-class work; even more exceptional than are the qualities needed by the head of a white congregation under present conditions. The most marked successes have been won by men, themselves of lofty and broad-minded spirituality, who have respected the advances already made by the Indian toward a higher spiritual life, and instead of condemning these advances have made use of them in bringing his soul to a loftier level. One very important service rendered by the missionaries is their warfare on what is evil among the white men on the reservations; they are most potent allies in warring against drink and sexual immorality, two of the greatest curses with which the Indian has to contend. The missionary is always the foe of the white man of loose life and of the white man who sells whiskey. Many of the missionaries, including all who do most good, are active in protecting the rights of each Indian to his land. Like the rest of us, the missionary needs to keep in mind the fact that the Indian criminal is on the whole more dangerous to the well-meaning Indian than any outsider can at present be; for there are as wide differences of character and conduct among Indians as among whites, and there is the same need in the one case as in the other of treating each individual according to his conduct—and of persuading the people of his own class and color thus to treat him.

Several times we walked up the precipitous cliff trails to the mesa top, and visited the three villages

thereon. We were received with friendly courtesy—perhaps partly because we endeavored to show good manners ourselves, which, I am sorry to say, is not invariably the case with tourists. The houses were colored red or white; and the houses individually, and the villages as villages, compared favorably with the average dwelling or village in many of the southern portions of Mediterranean Europe. Contrary to what we had seen in the Hopi village near Tuba, most of the houses were scrupulously clean; although the condition of the streets—while not worse than in the Mediterranean villages above referred to—showed urgent need of a crusade for sanitation and elementary hygiene. The men and women were well dressed, in clothes quite as picturesque and quite as near our own garb as the dress of many European peasants of a good type; aside, of course, from the priests and young men who were preparing for the ceremonial dance, and who were clad, or unclad, according to the ancient ritual. There were several rooms in each house; and the furniture included stoves, sewing-machines, chairs, window-panes of glass, and sometimes window-curtains. There were wagons in one or two of the squares, for a wagon road has been built to one end of the mesa; and we saw donkeys laden with fagots or water—another south European analogy.

Altogether, the predominant impression made by the sight of the ordinary life—not the strange heathen ceremonies—was that of a reasonably advanced, and still advancing, semicivilization; not savagery at all. There is big room for improvement; but so there is among whites; and while the improvement should be along the lines of gradual assimilation to the life of the best whites, it should unquestionably be so

shaped as to preserve and develop the very real element of native culture possessed by these Indians—which, as I have already said, if thus preserved and developed, may in the end become an important contribution to American cultural life. Ultimately I hope the Indian will be absorbed into the white population, on a full equality; as was true, for instance, of the Indians who served in my own regiment, the Rough Riders; as is true on the Navajo reservation itself of two of the best men thereon, both in government employ, both partly of northern Indian blood, and both indistinguishable from the most upright and efficient of the men of pure white blood.

A visiting clergyman from the Episcopal cathedral at Fond du Lac took me into one of the houses to look at the pottery. The grandmother of the house was the pottery-maker, and, entirely unhelped from without and with no incentive of material reward, but purely to gratify her own innate artistic feeling, she had developed the art of pottery-making to a very unusual degree; it was really beautiful pottery. On the walls, as in most of the other houses, were picture-cards and photographs, including those of her children and grandchildren, singly and grouped with their schoolmates. Two of her daughters and half a dozen grandchildren were present, and it was evident that the family life was gentle and attractive. The grandfather was not a Christian, but "he is one of the best old men I ever knew, and I must say that I admire and owe him much, if I am a parson," said my companion. The Hopis are monogamous, and the women are well treated; the man tills the fields and weaves, and may often be seen bringing in fire-wood; and the fondness of both father and mother for their children is very evident.

Many well-informed and well-meaning men are apt to protest against the effort to keep and develop what is best in the Indian's own historic life as incompatible with making him an American citizen, and speak of those of opposite views as wishing to preserve the Indians only as national bric-à-brac. This is not so. We believe in fitting him for citizenship as rapidly as possible. But where he cannot be pushed ahead rapidly we believe in making progress slowly, and in all cases where it is possible we hope to keep for him and for us what was best in his old culture. As eminently practical men as Mr. Frissell, the head of Hampton Institute (an educational model for white, red, and black men alike), and Mr. Valentine, the late commissioner of Indian affairs, have agreed with Miss Curtis in drawing up a scheme for the payment from private sources of a number of high-grade, specially fitted educational experts, whose duty it should be to correlate all the agencies, public and private, that are working for Indian education, and also to make this education, not a mechanical impress from without, but a drawing out of the qualities that are within. The Indians themselves must be used in such education; many of their old men can speak as sincerely, as fervently, and as eloquently of duty as any white teacher, and these old men are the very teachers best fitted to perpetuate the Indian poetry and music. The effort should be to develop the existing art—whether in silver-making, pottery-making, blanket and basket weaving, or lace-knitting—and not to replace it by servile and mechanical copying. This is only to apply to the Indian a principle which ought to be recognized among all our people. A great art must be living, must spring from the soul of the people; if it represents merely a copying,

an imitation, and if it is confined to a small caste, it cannot be great.

Of course all Indians should not be forced into the same mould. Some can be made farmers; others mechanics; yet others have the soul of the artist. Let us try to give each his chance to develop what is best in him. Moreover, let us be wary of interfering overmuch with either his work or his play. It is mere tyranny, for instance, to stop all Indian dances. Some, which are obscene or which are dangerous on other grounds, must be prohibited. Others should be permitted, and many of them encouraged. Nothing that tells for the joy of life, in any community, should be lightly touched.

A few Indians may be able to turn themselves into ordinary citizens in a dozen years. Give these exceptional Indians every chance; but remember that the majority must change gradually, and that it will take generations to make the change complete. Help them to make it in such fashion that when the change is accomplished we shall find that the original and valuable elements in the Indian culture have been retained, so that the new citizens come with full hands into the great field of American life, and contribute to that life something of marked value to all of us, something which it would be a misfortune to all of us to have destroyed.

As an example, take the case of these Hopi mesa towns, perched in such boldly picturesque fashion on high, sheer-walled rock ridges. Many good people wish to force the Hopis to desert these towns, and live in isolated families in nice tin-roofed houses on the plains below. I believe that this would be a mistake from the standpoint of the Indians—not to mention

depriving our country of something as notable and as attractive as the castles that have helped make the Rhine beautiful and famous. Let the effort be to insist on cleanliness and sanitation in the villages as they are, and especially to train the Indians themselves to insist thereon; and to make it easier for them to get water. In insisting on cleanliness, remember that we preach a realizable ideal; our own ancestors lived in villages as filthy not three centuries ago. The breezy coolness of the rocky mesa top and the magnificent outlook would make it to me personally a far more attractive dwelling-place than the hot, dusty plains. Moreover, the present Hopi house, with its thick roof, is cooler and pleasanter than a tin-roofed house. I believe it would be far wiser gradually to develop the Hopi house itself, making it more commodious and convenient, rather than to abandon it and plant the Indian in a brand-new, government-built house, precisely like some ten million other cheap houses. The Hopi architecture is a product of its own environment; it is as picturesque as anything of the kind which our art students travel to Spain in order to study. Therefore let us keep it. The Hopi architecture can be kept, adapted, and developed just as we have kept, adapted, and developed the Mission architecture of the Southwest—with the results seen in beautiful Leland Stanford University. The University of New Mexico is, most wisely, modelled on these pueblo buildings; and the architect has done admirable work of the kind by adapting Indian architectural ideas in some of his California houses. The Hopi is himself already thus developing his house; as I have said, he has put in glass windows and larger doors; he is furnishing it; he is making it continually more livable. Give him a chance

to utilize his own inherent sense of beauty in making over his own village for himself. Give him a chance to lead his own life as he ought to; and realize that he has something to teach us as well as to learn from us. The Hopi of the younger generation, at least in some of the towns, is changing rapidly; and it is safe to leave it to him to decide where he will build and keep his house.

I cannot so much as touch on the absorbingly interesting questions of the Hopi spiritual and religious life, and of the amount of deference that can properly be paid to one side of this life. The snake-dance and antelope-dance, which we had come to see, are not only interesting as relics of an almost inconceivably remote and savage past—analogous to the past wherein our own ancestors once dwelt—but also represent a mystic symbolism which has in it elements that are ennobling and not debasing. These dances are prayers or invocations for rain, the crowning blessing in this dry land. The rain is adored and invoked both as male and female; the gentle steady downpour is the female, the storm with lightning the male. The lightning-stick is "strong medicine," and is used in all these religious ceremonies. The snakes, the brothers of men, as are all living things in the Hopi creed, are besought to tell the beings of the underworld man's need of water.

As a former great chief at Washington I was admitted to the sacred room, or one-roomed house, the kiva, in which the chosen snake priests had for a fortnight been getting ready for the sacred dance. Very few white men have been thus admitted, and never unless it is known that they will treat with courtesy and respect what the Indians revere. Entrance to the house, which was sunk in the rock, was through a hole in the roof,

down a ladder across whose top hung a cord from which fluttered three eagle plumes and dangled three small animal skins. Below was a room perhaps fifteen feet by twenty-five. One end of it, occupying perhaps a third of its length, was raised a foot above the rest, and the ladder led down to this raised part. Against the rear wall of this raised part or dais lay thirty odd rattlesnakes, most of them in a twined heap in one corner, but a dozen by themselves scattered along the wall. There was also a pot containing several striped ribbon-snakes, too lively to be left at large. Eight or ten priests, some old, some young, sat on the floor in the lower and larger two-thirds of the room, and greeted me with grave courtesy; they spread a blanket on the edge of the dais, and I sat down, with my back to the snakes and about eight feet from them; a little behind and to one side of me sat a priest with a kind of fan or brush made of two or three wing-plumes of an eagle, who kept quiet guard over his serpent wards. At the farther end of the room was the altar; the rude picture of a coyote was painted on the floor, and on the four sides of this coyote picture were paintings of snakes; on three sides it was hemmed in by lightning-sticks, or thunder-sticks, standing upright in little clay cups, and on the fourth side by eagle plumes held similarly erect. Some of the priests were smoking—for pleasure, not ceremonially—and they were working at parts of the ceremonial dress. One had a cast rattlesnake-skin which he was chewing, to limber it up, just as Sioux squaws used to chew buckskin. Another was fixing a leather apron with pendent thongs; he stood up and tried it on. All were scantily clad, in breech-clouts or short kilts or loin flaps; their naked, copper-red bodies, lithe and sinewy, shone, and each

had been splashed in two or three places with a blotch or streak of white paint. One spoke English and translated freely; I was careful not to betray too much curiosity or touch on any matter which they might be reluctant to discuss. The snakes behind me never rattled or showed any signs of anger; the translator volunteered the remark that they were peaceable because they had been given medicine—whatever that might mean, supposing the statement to be true according to the sense in which the words are accepted by plainsmen. But several of them were active in the sluggish rattlesnake fashion. One glided sinuously toward me; when he was a yard away, I pointed him out to the watcher with the eagle feathers; the watcher quietly extended the feathers and stroked and pushed the snake's head back, until it finally turned and crawled back to the wall. Half a dozen times different snakes thus crawled out toward me and were turned back, without their ever displaying a symptom of irritation. One snake got past the watcher and moved slowly past me about six inches away, whereupon the priest on my left leaned across me and checked its advance by throwing pinches of dust in its face until the watcher turned round with his feather sceptre. Every move was made without hurry and with quiet unconcern; neither snake nor man, at any time, showed a trace of worry or anger; all, human beings and reptiles, were in an atmosphere of quiet peacefulness. When I rose to say good-by, I thanked my hosts for their courtesy; they were pleased, and two or three shook hands with me.

On the afternoon of the following day, August 20, the antelope priests—the men of the antelope clan—held their dance. The snake priests took part. It was

held in the middle of Walpi village, round a big, rugged column of rock, a dozen feet high, which juts out of the smooth surface. The antelope-dancers came in first, clad in kilts, with fox-skins behind; otherwise naked, painted with white splashes and streaks, and their hair washed with the juice of the yucca root. Their leader's kilt was white; he wore a garland and anklets of cottonwood-leaves, and sprinkled water from a sacred vessel to the four corners of heaven. Another leader carried the sacred bow and a bull-roarer, and they moved to its loud, moaning sound. The snake priests were similarly clad, but their kirtles were of leather; eagle plumes were in their long hair, and under their knees they carried rattles made of tortoise-shell. In two lines they danced opposite each other, keeping time to the rhythm of their monotonous chanting.

On the top of the column were half a dozen Hopi young men, clad in ordinary white man's clothing. Archie joined these, and entered into conversation with them. They spoke English; they had been at non-reservation schools; they were doing well as farmers and citizens. One and all they asserted that, in order to prosper in after-life, it was necessary for the Indian to get away to a non-reservation school; that merely to go to an agency school was not enough in any community which was on the highroad of progress; and that they intended to send their own children for a couple of years to an agency school and then to a non-reservation school. They looked at the ceremonial religious dances of their fathers precisely as the whites did; they were in effect Christians, although not connected with any specific church. They represented substantial success in the effort to raise the Indian to the level of the white man. In their case it was not

necessary to push them toward forgetfulness of their past. They were travelling away from it naturally, and of their own accord. As their type becomes dominant the snake-dance and antelope-dance will disappear, the Hopi religious myths will become memories, and the Hopis will live in villages on the mesa tops, or scattered out on the plains, as their several inclinations point, just as if they were so many white men. It is to be hoped that the art, the music, the poetry of their elders will be preserved during the change coming over the younger generation.

On my return from this dance I met two of the best Indian agents in the entire service. The first was Mr. Parquette, a Wisconsin man, himself part Indian by blood. The other was Mr. Shelton, who has done more for the Navajos than any other living man. He has sternly put down the criminal element exactly as he has toiled for and raised the decent Indians and protected them against criminal whites; moreover, he has actually reformed these Indian criminals, so that they are now themselves decent people and his fast friends; while the mass of the Indians recognize him as their leader who has rendered them incalculable services. He has got the Indians themselves to put an absolute stop to gambling, whiskey-drinking, and sexual immorality. His annual agricultural fair is one of the features of Navajo life, and is of far-reaching educational value. Yet this exceptionally upright and efficient public servant, who has done such great and lasting good to the Indians, was for years the object of attack by certain Eastern philanthropic associations, simply because he warred against Indian criminals who were no more entitled to sympathy than the members of the Whyo gang in New York City. Messrs.

Shelton and Parquette explained to me the cruel wrong that would be done to the Navajos if their reservation was thrown open or cut down. It is desert country. It cannot be utilized in small tracts, for in many parts the water is so scanty that hundreds, and in places even thousands, of acres must go to the support of any family. The Indians need it all; they are steadily improving as agriculturists and stock-growers; few small settlers could come in even if the reservation were thrown open; the movement to open it, and to ruin the Indians, is merely in the interest of a few needy adventurers and of a few wealthy men who wish to increase their already large fortunes and who have much political influence.

Mr. Robinson, the superintendent of irrigation, in protesting against opening the reservation, dwelt upon the vital need of getting from Congress sufficient money to enable the engineers to develop water by digging wells, preserving springs, and making flood reservoirs. The lack of water is the curse of this desert reservation. The welfare of the Indians depends on the further development of the water-supply.

That night fires flared from the villages on the top of the mesa. Before there was a hint of dawn we heard the voice of the crier summoning the runners to get ready for the snake-dance; and we rose and made our way to the mesa top. The "yellow line," as the Hopis call it, was in the east, and dawn was beautiful, as we stood on the summit and watched the women and children in their ceremonial finery, looking from the housetops and cliff edges for the return of the racers. On this occasion they dropped their civilized clothes. The children were painted and naked save for kilts; and they wore feathers and green corn-leaves

in their hair. The women wore the old-style clothing; many of them were in their white bridal dresses, which in this queer tribe are woven by the bridegroom and his male kinsfolk for the bride's trousseau. The returning racers ran at speed up the precipitous paths to the mesa, although it was the close of a six-mile run. Most of them, including the winner, wore only a breech-clout and were decked with feathers. I should like to have entered that easy-breathing winner in a Marathon contest! Many of the little boys ran the concluding mile or so with them; and the little girls made a pretty spectacle as they received the little boys much as the women and elder girls greeted the men. Then came the corn-scramble, or mock-fight over the corn; and then in each house a feast was set, especially for the children.

At noon, thanks to Mr. Hubbell and to the fact that I was an ex-President, we were admitted to the sacred kiva—the one-roomed temple-house which I had already visited—while the snake priests performed the ceremony of washing the snakes. Very few white men have ever seen this ceremony. The sight was the most interesting of our entire trip.

There were twenty Indians in the kiva, all stripped to their breech-clouts; only about ten actually took part in handling the snakes, or in any of the ceremonies except the rhythmic chant, in which all joined. Eighty or a hundred snakes, half of them rattlers, the others bull-snakes or ribbon-snakes, lay singly or in tangled groups against the wall at the raised end of the room. They were quiet and in no way nervous or excited. Two men stood at this end of the room. Two more stood at the other end, where the altar was; there was some sand about the altar, and the eagle feathers we

had previously seen there had been removed, but the upright thunder-sticks remained. The other Indians were squatted in the middle of the room, and half a dozen of them were in the immediate neighborhood of a very big, ornamented wooden bowl of water, placed on certain white-painted symbols on the floor. Two of these Indians held sacred rattles, and there was a small bowl of sacred meal beside them. There was some seemingly ceremonial pipe-smoking.

After some minutes of silence, one of the squatting priests, who seemed to be the leader, and who had already puffed smoke toward the bowl, began a low prayer, at the same time holding and manipulating in his fingers a pinch of the sacred meal. The others once and again during this prayer uttered in unison a single word or exclamation—a kind of selah or amen. At the end he threw the meal into the bowl of water; he had already put some in at the outset of the prayer. Then he began a rhythmic chant, in which all the others joined, the rattles being shaken and the hands moved in harmony with the rhythm. The chant consisted seemingly of a few words repeated over and over again. It was a strange scene, in the half-light of the ancient temple-room. The copper-red bodies of the priests swayed, and their strongly marked faces, hitherto changeless, gained a certain quiet intensity of emotion. The chanting grew in fervor; yet it remained curiously calm throughout (except for a moment at a time, about which I shall speak later). Then the two men who stood near the snakes stooped over, and each picked up a handful of them, these first handfuls being all rattlesnakes. It was done in tranquil, matter-of-fact fashion, and the snakes behaved with equally tranquil unconcern. All was quiet save for the chanting. The

snakes were handed to two of the men squatting round the bowl, who received them as if they had been harmless, holding them by the middle of the body, or at least well away from the head. This was repeated until half a dozen of the squatting priests held each three or four poisonous serpents in his hands. The chanting continued, in strongly accented but monotonous rhythm, while the rattles were shaken, and the snakes moved up and down or shaken, in unison with it. Then suddenly the chant quickened and rose to a scream, and the snakes were all plunged into the great bowl of water, a writhing tangle of snakes and hands. Immediately afterward they were withdrawn, as suddenly as they had been plunged in, and were hurled half across the room, to the floor, on and around the altar. They were hurled from a distance of a dozen feet, with sufficient violence to overturn the erect thunder-sticks. That the snakes should have been quiet and inoffensive under the influence of the slow movements and atmosphere of calm that had hitherto obtained was understandable; but the unexpected violence of the bathing and then of the way in which they were hurled to the floor, together with the sudden screaming intensity of the chant, ought to have upset the nerves of every snake there. However, it did not. The snakes woke to an interest in life, it is true, writhed themselves free of one another and of the upset lightning-sticks, and began to glide rapidly in every direction. But only one showed symptoms of anger, and these were not marked. The two standing Indians at this end of the room herded the snakes with their eagle feathers, gently brushing and stroking them back as they squirmed toward us, or toward the singing, sitting priests.

The process was repeated until all the snakes, venomous and non-venomous alike, had been suddenly bathed and then hurled on the floor, filling the other end of the room with a wriggling, somewhat excited serpent population, which was actively, but not in any way nervously, shepherded by the two Indians stationed for that purpose. These men were, like the others, clad only in a breech-clout, but they moved about among the snakes, barelegged and barefooted, with no touch of concern. One or two of the rattlers became vicious under the strain, and coiled and struck. I thought I saw one of the two shepherding watchers struck in the hand by a recalcitrant sidewinder which refused to be soothed by the feathers and which he finally picked up; but, if so, the man gave no sign and his placidity remained unruffled. Most of the snakes showed no anger at all; it seemed to me extraordinary that they were not all of them maddened.

When the snakes had all been washed, the leading priest again prayed. Afterward he once more scattered meal in the bowl, in lines east, west, north, and south, and twice diagonally. The chant was renewed; it grew slower; the rattles were rattled more slowly; then the singing stopped and all was over.

At the end of the ceremony I thanked my hosts and asked if there was anything I could do to show my appreciation of the courtesy they had shown me. They asked if I could send them some cowry shells, which they use as decorations for the dance. I told them I would send them a sackful. They shook hands cordially with all of us, and we left. I have never seen a wilder or, in its way, more impressive spectacle than that of these chanting, swaying, red-skinned medicine-men, their lithe bodies naked, unconcernedly handling the

death that glides and strikes, while they held their mystic worship in the gray twilight of the kiva. The ritual and the soul-needs it met, and the symbolism and the dark savagery, were all relics of an ages-vanished past, survivals of an elder world.

The snake-dance itself took place in the afternoon at five o'clock. There were many hundreds of onlookers, almost as many whites as Indians, and most of the Indian spectators were in white man's dress, in strong contrast to the dancers. The antelope priests entered first and ranged themselves by a tree-like bundle of cottonwood branches against the wall of buildings to one side of the open place where the dance takes place; the other side is the cliff edge. The snakes, in a bag, were stowed by the bundle of cottonwood branches. Young girls stood near the big pillar of stone with sacred meal to scatter at the foot of the pillar after the snakes had been thrown down there and taken away. Then the snake priests entered in their fringed leather kilts and eagle-plume head-dresses; fox-skins hung at the backs of their girdles, their bodies were splashed and streaked with white, and on each of them the upper part of the face was painted black and the lower part white. Chanting, and stepping in rhythm to the chant, and on one particular stone slab stamping hard as a signal to the underworld, they circled the empty space and for some minutes danced opposite the line of antelope priests. Then, in couples, one of each couple seizing and carrying in his mouth a snake, they began to circle the space again. The leading couple consisted of one man who had his arm across the shoulder of another, while this second man held in his teeth, by the upper middle of its body, a rattle-snake four feet long, the flat, ace-of-clubs-shaped head

and curving neck of the snake being almost against the man's face. Rattlesnakes, bull-snakes, ribbon-snakes, all were carried in the same way. One man carried at the same time two small sidewinder rattlesnakes in his mouth. After a while each snake was thrown on the rock and soon again picked up and held in the hand, while a new snake was held in the mouth. Finally each man carried a bundle of snakes in his hand, all so held as to leave the head free, so that the snake could strike if it wished. Most of the snakes showed no anger or resentment. But occasionally one, usually a small sidewinder, half coiled or rattled when thrown down; and in picking these up much caution was shown, the Indian stroking the snake with his eagle feathers and trying to soothe it and get it to straighten out; and if it refused to be soothed, he did his best to grasp it just back of the head; and when he had it in his hand, he continued to stroke the body with the feathers, obviously to quiet it. But whether it were angry or not, he always in the end grasped and lifted it—besides keeping it from crawling among the spectators. Several times I saw the snakes strike at the men who were carrying them, and twice I was sure they struck home—once a man's wrist, once his finger. Neither man paid any attention or seemed to suffer in any way. I saw no man struck in the face; but several of my friends had at previous dances seen men so struck. In one case the man soon showed that he was in much pain, although he continued to dance, and he was badly sick for days; in the other cases no bad result whatever followed.

At last all the snakes were in the hands of the dancers. Then all were thrown at the foot of the natural stone pillar, and immediately, with a yell, the dancers leaped

in, seized, each of them, several snakes, and rushed away, east, west, north, and south, dashing over the edge of the cliff and jumping like goats down the precipitous trails. At the foot of the cliff, or on the plain, they dropped the snakes, and then returned to purify themselves by drinking and washing from pails of dark sacred water—medicine water—brought by the women. It was a strange and most interesting ceremony all through.

I do not think any adequate explanation of the immunity of the dancers has been advanced. Perhaps there are several explanations. These desert rattlesnakes are not nearly as poisonous as the huge diamond-backs of Florida and Texas; their poison is rarely fatal. The dancers are sometimes bitten; usually they show no effects, but, as above said, in one instance the bitten man was very sick for several days. It has been said that the fangs are extracted; but even in this case the poison would be loose in the snake's mouth and might get in the skin through the wounds made by the other teeth; and I noticed that when any snake, usually a small sidewinder, showed anger and either rattled or coiled, much caution was shown in handling it, and every effort made to avoid being bitten. It is also asserted that the snakes show the quiet and placid indifference they do because they are drugged, and one priest told me they are given "medicine"; but I have no idea whether this is true. Nor do I know whether the priests themselves take medicine. I believe that one element in the matter is that the snake priests either naturally possess or develop the same calm power over these serpents that certain men have over bees; the latter power, the existence of which is so well known, has never received the attention and

study it deserves. An occasional white man has such power with snakes. There was near my ranch on the Little Missouri, twenty-five years ago, a man who had this power. He was a rather shiftless, ignorant man, of a common frontier type, who failed at about everything, and I think he was himself surprised when he found that he could pick up and handle rattlesnakes with impunity. There was no deception about it. I would take him off on horseback, and when I found a rattler he would quietly pick it up by the thick part of the body and put it in a sack. He sometimes made movements with his hands before picking up a coiled rattler; but when he had several in a bag he would simply put his hand in, take hold of a snake anywhere, and draw it out. I can understand the snakes being soothed and quieted by the matter-of-fact calm and fearlessness of the priests for most of the time; but why the rattlers were not all maddened by the treatment they received at the washing in the kiva, and again when thrown on the dance rock, I cannot understand.

That night we motored across the desert with Mr. Hubbell to his house and store at Ganado, sixty miles away, and from Ganado we motored to Gallup, and our holiday was at an end. Mr. Hubbell is an Indian trader. His Ganado house, right out in the bare desert, is very comfortable and very attractive, and he treats all comers with an open-handed hospitality inherited from pioneer days. He has great influence among the Navajos, and his services to them have been of much value. Every ounce of his influence has been successfully exerted to put a stop to gambling and drinking; his business has been so managed as to be an important factor in the material and moral betterment of the

Indians with whom he has dealt. And he has been the able champion of their rights wherever these rights have been menaced from any outside source.

Arizona and New Mexico hold a wealth of attraction for the archæologist, the anthropologist, and the lover of what is strange and striking and beautiful in nature. More and more they will attract visitors and students and holiday-makers. That part of northern Arizona which we traversed is of such extraordinary interest that it should be made more accessible by means of a government-built motor road from Gallup to the Grand Canyon; a road from which branch roads, as good as those of Switzerland, would gradually be built to such points as the Hopi villages and the neighborhood of the Natural Bridge.

IV

THE RANCH LAND OF ARGENTINA AND SOUTHERN BRAZIL

In the fall of 1913 I enjoyed a glimpse of the ranch country of southern Brazil and of Argentina. It was only a glimpse; for I was bent on going northward into the vast wilderness of tropical South America. I had no time to halt in the grazing country of temperate South America, which is no longer a wilderness, but a land already feeling the sweep of the modern movement. It is a civilized land, already fairly well settled, which by leaps and bounds is becoming thickly settled; a region which at the present day is in essentials far more closely kin to the plains country, which in temperate North America stretches from Hudson Bay to the Gulf, than either land is kin to what each was even half a century ago. The main difference is that the great cow country, the plains country, of North America was peopled only by savages when the white pioneers entered it in the nineteenth century; whereas throughout temperate South America there were here and there oases of thin settlement, including even small, stagnant cities, already two or three centuries old. In these oases people wholly or partly of European blood had gradually developed a peculiar and backward, but real, semicivilization of their own. This quaint, distinctive social culture has been, or is now being, engulfed by the rising tide of intensely modern internationalized material development.

Among the many pleasant memories of my visit to Argentina, one of the most pleasant is that of a dinner

at the house of the governor of the old provincial capital of Mendoza. Our distinguished host came of an old country family which for many centuries led the life of the great cattle-breeding ranch-owners, although his people were more and more turning their attention to agriculture, he himself being a successful farmer, as well as an invaluable public servant of advanced views. His father was at the dinner. He had retired as a general after forty-nine years' service in the Argentine army. The fine old fellow represented what was best in the Argentine type before the days of modern industrialism. A very vigorous and manly best it was, too. He wore the old Argentine uniform, which for his rank was the same as the uniform once worn by Napoleon's officers. He had served in the bloody Paraguayan War, when Argentina, Brazil, and Uruguay joined to overthrow the inconceivably murderous dictatorship of Lopez, and when the Paraguayans rallied with savage valor under the banner of the dictator, who tyrannized over them, but who nevertheless represented in their eyes the nation. This old general had served in many Indian wars, both in Patagonia and in the Grand Chaco, and had seen desperate fighting in the civil wars. He wore medals commemorating his services in the Paraguayan and Indian campaigns, but he would not wear any medals commemorating his services in the civil wars. Yet the only time he was wounded was in one of the battles in one of these civil wars. He was then shot twice and received a bayonet thrust and was also stabbed with a lance. If he had not possessed a constitution of iron he would never have survived. Our people in the United States often speak of these South American wars with the same ignorant lack of ap-

preciation that used to be shown by European military men in speaking of our own Civil War and other contests. This attitude is as foolish on our part in the one case as it was foolish on the part of the Europeans in question in the other case. The South American Indian fighting was of the same hazardous character, and the Indian campaigns were fraught with the same wearing fatigue, and marked by the same risk and wild adventure, as in the case of our own Indian campaigns. In the Argentine civil wars, and in the Paraguayan War, as in the wars which the Chileans have waged, the fighting was, on the whole, rather more desperate than in any contest between the civilized nations of Europe from the close of the Napoleonic struggles to the opening of the present gigantic contest. There is no more formidable fighting material in the world than is afforded by certain elements in the populations of some of these Latin-American countries. The general of whom I am speaking was himself a most interesting example of a vanishing type. Lovers of good literature should read the sketches of old-time Argentine life in Hudson's "El Ombu." When they have done so, they will understand the strength and the ruthlessness which produced leaders of the stamp of the scarred and war-hardened veteran who in full general's uniform met us at dinner at the house of his son, the governor of Mendoza.

The old-time conditions of gaucho civilization that produced these wild and formidable fighting men, who fought as they lived, on the backs of their horses, have vanished as utterly as our own far West of the days of Kit Carson. The Argentine country life has changed as completely as the Argentine city life. They are gone, those long years during which the gaucho rode

over unfenced plains after gaunt cattle, and warred against the scarcely wilder Indians with whom he vied in horsemanship and plains-craft and hardihood and from whom he borrowed that strange weapon, the bolas. Even the southern Andes of what was once Patagonia are unexplored only in the sense that the Rockies of Alberta are not yet completely explored. Much of the former ranch country is now wheat-land, where the workmen of foreign, especially Italian, origin far outnumber the men of old Hispano-Indian stock. Great cattle-ranches remain; but they are handled substantially like great modern ranches in our own Southwest, and the blooded horses and high-grade cattle are kept in large, fenced pastures. In most places the gaucho has changed as our own cowboy has changed. He is as bold and good a horseman as ever; but it is only in out-of-the-way places that he retains all his old-time wild and individual picturesqueness. Elsewhere he is now merely an unusually capable ranch-hand. His employer has changed even more. The big, handsome ranch-houses are fitted with every modern comfort and luxury, and the owners belong in all ways to the internationalized upper class of the world of to-day. The interest attaching to a visit to one of these civilized ranches is that which attaches to a visit to a fine modern stock-farm anywhere, whether in Hungary or Kentucky or Victoria.

But there is one vital point—*the* vital point—in which the men and women of these ranch-houses, like those of the South America that I visited generally, are striking examples to us of the English-speaking countries both of North America and Australia. The families are large. The women, charming and attractive, are good and fertile mothers in all classes of

society. There are no symptoms of that artificially self-produced dwindling of population which is by far the most threatening symptom in the social life of the United States, Canada, and the Australian commonwealths. The nineteenth century saw a prodigious growth of the English-speaking, relative to the Spanish-speaking, population of the new worlds west of the Atlantic and in the Southern Pacific. The end of the twentieth century will see this completely reversed unless the present ominous tendencies as regards the birth-rate are reversed. A race is worthless and contemptible if its men cease to be willing and able to work hard and, at need, to fight hard, and if its women cease to breed freely. I am not speaking of pauper families with excessive numbers of ill-nourished and badly brought-up children; I am well aware that, like most wise and good principles, this which I advocate can be carried to a mischievous excess; but it nevertheless remains true that voluntary sterility among married men and women of good life is, even more than military or physical cowardice in the ordinary man, the capital sin of civilization, whether in France or Scandinavia, New England or New Zealand. If the best classes do not reproduce themselves the nation will of course go down; for the real question is encouraging the fit, and discouraging the unfit, to survive. When the ordinary decent man does not understand that to marry the woman he loves, as early as he can, is the most desirable of all goals, the most successful of all forms of life entitled to be called really successful; when the ordinary woman does not understand that all other forms of life are but makeshift and starveling substitutes for the life of the happy wife, the mother of a fair-sized family of healthy children; then the

state is rotten at heart. The loss of a healthy, vigorous, natural sexual instinct is fatal; and just as much so if the loss is by disuse and atrophy as if it is by abuse and perversion. Whether the man, in the exercise of one form of selfishness, leads a life of easy self-indulgence and celibate profligacy; or whether in the exercise of a colder but no less repulsive selfishness, he sacrifices what is highest to some form of mere material achievement in accord with the base proverb that "he travels farthest who travels alone"; or whether the sacrifice is made in the name of the warped and diseased conscience of asceticism—the result is equally evil. So, likewise, with the woman. In many modern novels there is portrayed a type of cold, selfish, sexless woman who plumes herself on being "respectable," but who is really a rather less desirable member of society than a prostitute. Unfortunately the portrayal is true to life. The woman who shrinks from motherhood is as low a creature as a man of the professional pacificist, or poltroon, type, who shirks his duty as a soldier. The only full life for man or woman is led by those men and women who together, with hearts both gentle and valiant, face lives of love and duty, who see their children rise up to call them blessed and who leave behind them their seed to inherit the earth. Dealing with averages, it is the bare truth to say that no celibate life approaches such a life in point of usefulness, no matter what the motive for the celibacy—religious, philanthropic, political, or professional. The mother comes ahead of the nun—and also of the settlement or hospital worker; and if either man or woman must treat a profession as a substitute for, instead of as an addition to or basis for, marriage, then by all means the profession or other "career" should be

abandoned. It is of course not possible to lay down universal rules. There must be exceptions. But the rule must be as above given. In a community which is at peace there may be a few women or a few men who for good reasons do not marry, and who do excellent work nevertheless; just as in a community which is at war, there may be a few men who for good reasons do not go out as soldiers. But if the average woman does not marry and become the mother of enough healthy children to permit the increase of the race; and if the average man does not, above all other things, wish to marry in time of peace and to do his full duty in war if the need arises, then the race is decadent, and should be swept aside to make room for one that is better. Only that nation has a future whose sons and daughters recognize and obey the primary laws of their racial being.

In these essentials Argentina, Chile, Uruguay, and Brazil have far more to teach than to learn from the English-speaking countries which are so proud of their abounding material prosperity and of their wide-spread, but superficial, popular education and intelligence. In this same material prosperity and in many other matters, Argentina much resembles our own country. Brazil is travelling a similar path, although much more slowly; and although its climate is not so good, its natural resources are vaster and will in the present century undergo an extraordinary development. Very much of the Brazilian country from São Paulo to the Uruguayan frontier is essentially like Argentina. The city life and the ranch life are advancing in much the same fashion; although of course there are sharp differences in culture and habits of thought and life between the great Spanish-speaking and great Portu-

guese-speaking republics which are such close, and not wholly friendly, neighbors.

One point of similarity is the number of immigrants in each country. In our journey southward from São Paulo we found both towns and stretches of ranch land in which Germans, Italians, and Catholic, Orthodox, or Uniate Slavs, were important, and sometimes preponderant, elements of the population. There were German Lutheran churches and also congregations of native Protestants started by American missionaries; for Brazil, like Argentina and the United States, enjoys genuine religious liberty.

This rich and beautiful country of southern Brazil is part of the last great stretch of country—south-temperate America—which remains in either temperate zone open to white settlement on a large scale; the last great stretch of scantily peopled land with a good climate and fertile soil to which white immigration can go in mass.

Of part of tropical Brazil I have written elsewhere, and I allude to it elsewhere in this book. Here I am speaking not of the tropical but of the temperate country.

Portions of temperate Brazil are open prairie, portions are forest. The climate is never very hot, nor is there ever severe cold. The colonists with whom I conversed had not found the insects specially troublesome; not much more, and in places rather less, troublesome than in Louisiana and Texas. There was no more sickness than in the early days in the West. The general effect in the forest country, while of course the species of plants are entirely different, reminds the observer of the Louisiana and Mississippi cane-brake lands and the country along the Nueces. The activities

of the settlers in the open country are substantially those with which I was familiar thirty years ago in the cattle country of the West. In the forests one is reminded more of early days on the Ohio, the Yazoo, and the Red River of the South.

Certainly this is a country with a wonderful future. It offers fine opportunities for settlers who desire with the labor of their own hands to make homes for themselves and their children. This does not mean that all people who go there will prosper, or that success will come save at the price of labor and effort, of risk and hardship. If any Americans have forgotten how our own West in the pioneer days appealed to an observer who was friendly, but who had not the faintest glimmering of the pioneer spirit, let them read "Martin Chuzzlewit." Dickens represented the numerous men who foolishly hope to enjoy pioneer triumphs and yet escape pioneer risks and hardships and the unlovely and wearing toil which is the essential prerequisite to the triumph; and every one should remember that in a new country, which opens a chance of success to the settler, there always goes with this the chance of heart-breaking failure. Brazil offers remarkable openings for settlers who have the toughness of the born pioneer, and for certain business men and engineers who have the mixture of daring enterprise and sound common sense needed by those who push the industrial development of new countries. Both classes have great opportunities, and both need to be perpetually on their guard against the swindlers and the crack-brained enthusiasts who are always sure to turn up in connection with any country of large developmental possibilities. On the frontier, more than anywhere else, a man needs to be able to rely on himself and to re-

member that on every frontier there are innumerable failures.

No man can be guaranteed success. Men who are not prepared for labor and effort and rough living, for persistence and self-denial, are out of place in a new country; and foolish people who will probably fail anywhere are more certain to fail badly in a new country than anywhere else. During the whole period of the marvellous growth of the United States there has been a constant and uninterrupted stream of failure going side by side with the larger stream of success. Unless there is revolutionary disorder and anarchy, the future holds for southern Brazil much what half a century ago the future held for large portions of our country lying west of the Mississippi.

In southern Brazil the forest landscape through which we passed was very beautiful. The most conspicuous tree in the forest was the flat-topped pine, the shaft of which rose like that of a royal palm. The branches spread out at the top just where the palm-leaves spread out on the palm, only instead of drooping they curved upward like the branches of a candelabra. There were many other trees in the forests which I could not recognize or place. Some of them looked like our Southern live-oaks. Then there were palms, and multitudes of big tree-ferns. In places where these tree-ferns grew thickly among the tall, strange candelabra pines, with palms scattered here and there, and other queer, ancient tropical plants, the landscape looked as if it had come out of the carboniferous period—at least as the carboniferous period was represented in the attractive popular geologies of my youth. There were flowers in the woods, of brilliant and varied hues, although we saw but few orchids; and in the glades or

spots of open prairie there were immense patches of lilac and blue blossoms. The flowering trees were wonderful. On some the blooms were blue, on others yellow. The most beautiful of all flamed brilliant scarlet. The trees that bore them, when scattered over hillsides that sloped steeply to the brink of some rushing river, made splashes of burning red against the wet and vivid green of the subtropical foliage. As we got farther south I was told that there were occasional sharp frosts, but that the low temperature never lasted for more than an hour or so. In answer to a question as to how these rare, short frosts affected such plants as palms and tree-ferns, it was explained to me that the frosts prevented coffee being grown, but that they had no effect on the palms, and, rather curiously, no effect on the tree-ferns if they were under big forest trees, but that if they were in the open the fronds were killed, the trees themselves not being injured, and new fronds taking the place of the old ones.

In the open prairie country of the state of Parana we stopped at Morungava to visit the ranch of the Brazil Land, Cattle, and Packing Company. Our host, the head of this company, Murdo Mackenzie, for many years one of the best-known cattlemen in our own Western cow country, was an old friend of mine. During my term as President he was, on the whole, the most influential of the Western cattle-growers. He was a leader of the far-seeing and enlightened element. He was a most powerful supporter of the government in the fight for the conservation of our natural resources, for the utilization without waste of our forests and pastures, for honest treatment of everybody, and for the shaping of governmental policy

primarily in the interest of the small settler, the home-maker.

We rode first to Mackenzie's home-ranch, about a mile from the railway, and then to an outlying set of ranch-buildings ten miles off. At the home-ranch were the American foreman and his American wife and their children. The buildings and the food and the whole life were typical of all that was best in the old-time "far West," in the days when I knew it as a cattle country. We were given a most delicious and purely American lunch, including all the fresh milk we could drink; and the foreman himself piloted us over the immense stretches of rolling country, and in every action showed himself the born cattleman, the born and trained stockman. Half of the employees were men from the Western ranches, from Montana, Colorado, Texas, or elsewhere; and they and the stock and the vast, pleasant, open-air country were enough to make any man feel at home who had ever lived in the West. The children round the ranch-house were already speaking fluent Portuguese!

There were Indians in the neighborhood; but we saw none, for they are very shy and dwell in the timber. Although nominally Christian, and somewhat under the influence of the priests, they are otherwise entirely outside of governmental control. At first Mackenzie's cattle were sometimes killed by the wild, furtive creatures; but he stopped this by a mixture of firmness and fair treatment.

It was a beautiful country, well watered, with good grass and much timber. I was assured by both the men on the ranch and their wives that the climate was better than that of our own Western cattle country, for the heat is not as extreme as during summer in the

southern part of our country, and the winters are mild, with only occasional touches of frost. Much care has to be shown in dealing with the ticks and certain other insect plagues, but not materially more than in some of our own Southern regions. While we were at the outlying ranch we saw the cattle being dipped in familiar ranch fashion.

Cattle, horses, and hogs all thrive. All the native stock offers material on which to improve. The company is carefully breeding upward, following precisely the same course which in Texas, for instance, has effected a complete substitution of graded beef and dairy cattle for the old longhorns. The native cattle are very distinctly better than the old Texan cattle—the native Mexican cattle. The Durham and Hereford bulls introduced from the States will in a very few years completely change the character of the herds. Good cows are kept in sufficient numbers to insure a constant supply of the breeding bulls. In the same way Berkshire boars are being crossed with the native pigs, and blooded stallions with the native mares. In short, everything is being done exactly as on our advanced and successful ranches at home. The country is still largely vacant, and opportunities for development will be almost limitless for at least another generation.

Aside from the extreme interest of seeing the ranch itself, the twenty-mile ride was most enjoyable. The country was like our own plains near the foot-hills of the Rockies, except that there was more water and a greater variety of timber. The most striking trees were the occasional peculiar flat-top pines, and there were also other and very beautiful pines through which the wind sang mournfully; and there were many flowers. In one place we saw a small prairie-deer, and

in galloping we had to keep a lookout for armadillo burrows, just as we keep a lookout for prairie-dog holes in the West. The birds were strange and interesting, some of them with beautiful voices. Out on the plains were screamers, noisy birds as big as African bustards. One sparrow sang loudly at midday, round the corrals where we dismounted for lunch. He was a confiding, pretty little fellow, with head markings somewhat like those of our white-crowned and white-throated sparrows. He sang better than the former, and not as well as the latter.

The horses were good, and we thoroughly enjoyed our afternoon canter back to the home-ranch, when the shadows had begun to lengthen. We loped across the rolling grass-land and by the groves of strange trees, through the brilliant weather. Under us the horses thrilled with life; it was a country of vast horizons; we felt the promise of the future of the land across which we rode.

V

A CHILEAN RONDEO

On November 21, 1913, we crossed the Andes into Chile by rail. The railway led up the pass which, used from time immemorial by the Indians, afterward marked the course of traffic for their Spanish successors, and was traversed by the army of San Martin in the hazardous march that enabled him to strike the decisive blows in the war for South American independence. The valleys were gray and barren, the sides of the towering mountains were bare, the landscape was one of desolate grandeur. To the north the stupendous peak of Aconcagua rose in its snows.

On the Chilean side, as we descended, we passed a lovely lake, and went through wonderful narrow gorges; and farther down were trees and huge cactus and flowers of many colors. Then we reached the lower valleys and the plains; and the change was like magic. Suddenly we were in a rich fairy-land of teeming plenty and beauty, a land of fertile fields and shady groves, a land of grain and, above all, of many kinds of luscious fruits.

As in the Argentine and Brazil, every courtesy and hospitality was shown us in Chile. We enjoyed every experience throughout our stay. One of the pleasantest and most interesting days we passed was at a great ranch, a great cattle-farm and country place twenty-five or thirty miles from Santiago. It was some fifteen miles from the railway-station. The road led through

a rich, fertile country largely under tillage, but also largely consisting of great fenced pastures.

The owners of the ranch, our kind and courteous hosts, had summoned all the riders of the neighborhood to attend the *rondeo* (round-up and sports), and several hundred, perhaps a thousand, came. With the growth of cultivation of the soil and the introduction of improved methods of stock-breeding in Chile, the old rude life of the wild cow-herders is passing rapidly away. But in many places it remains in modified form, and the country folk whose business is pastoral form a striking and distinctive class. These countrymen live their lives in the saddle. All these men, whose industries are connected with cattle, are known as *huasos*. They are kin to the Argentine *gauchos*, and more remotely to our own cowboys.

As we neared the ranch, slipping down broad, dusty, tree-bordered roads beside which irrigation streams ran, we began to come across the *huasos* gathering for the sports. They rode singly and by twos and threes, or in parties of fifteen or twenty. They were on native Chilean horses—stocky, well-built beasts, hardy and enduring, and on the whole docile. Almost all the men wore the light *manta*, less heavy than the *serapi*, but like it in shape, the head of the rider being thrust through a hole in the middle. It would seem as though it might interfere with the free use of their arms, but it does not, and at the subsequent cattle sports many of the participants never took off their *mantas*. The riders wore straw hats of various types, but none of them with the sugar-loaf cones of the Mexicans. Their long spurs bore huge rowels. The *mantas* were not only picturesque, but gave the company a look of diversified and gaudy brilliancy, for they were of all

possible colors—green, red, brown, and blue, solid and patterned. The saddles were far forward, and the shoe-shaped wooden stirrups were elaborately carved.

The men were fine-looking fellows, some with smooth faces or mustaches, some with beards, some of them light, most of them dark. They rode their horses with the utter ease found only in those who are born to the saddle. Now and then there were family parties, mother and children, all, down to the smallest, riding their own horses or perhaps all going in a wagon. Once or twice we passed horsemen who were coming out of the yards of their tumble-down houses, women and children crowding round. Generally the women had something in the dress that reminded one more or less of our Southwestern semicivilized Indians, and the strain of Indian blood in both men and women was evident. Some of the men were poorly clad, others had paid much attention to their get-up and looked like very efficient dandies; but in its essentials the dress was always the same.

When we reached the ranch we first drove to a mass of buildings, which included the barns, branding-pens, corrals, and the like. It was here that the horsemen had gathered, and one of the pens was filled with an uneasy mass of cattle. Not far from this pen was a big hitching rail or bar, very stout, consisting of tree trunks at least a foot in diameter, the total length of the rail being forty or fifty feet. Beside it was a very large and stout corral. The inside of this corral was well padded with poles, making a somewhat springy wall, a feature I have never seen in any corrals in our own ranch country, but essential where the horses are trained to jam the cattle against the corral side.

Most of the sports took place inside this big corral.

Gates led into it from opposite ends. Some thirty or forty feet in front of one of the gates, and just about that distance from the middle of the corral, was a short, crescent-shaped fence which served to keep the stock that had yet to be worked separate from those that had been worked. Proceedings were begun by some thirty riders and a mob of cattle coming through one of the doors of the corral. A glance at the cattle was enough to show that the old days of the wild ranches had passed. These were not longhorns, staring, vicious creatures, shy and fleet as deer; they were graded stock, domestic in their ways, and rather reluctant to run. Among the riders, however, there was not the slightest falling off from the old dash and skill, and their very air, as they rode quietly in, and the way they sat every sudden, quick move of their horses showed their complete ease and self-confidence.

In addition to the *huasos*, the peasants-on-horseback, the riders included several of the gentry, the great landed proprietors. These took part in the sports, precisely as in our own land men of the corresponding class follow the hounds or play polo. Two of the most skilful and daring riders, who always worked together, were a wealthy neighboring ranchman and his son.

The first feat began by two of the horsemen, acting together, cutting out an animal from the bunch. This was done with skill and precision, but differed in no way from the work I used formerly to see and take part in on the Little Missouri. What followed, however, was totally different. The animal was raced by the two men out from the herd and from behind the little semicircular fence, and was taken at full speed round the edge of the great corral past the closed gate on the other side, and almost back to the starting-point. One

horseman rode behind the animal, a little on its inner side. The other rode outside it, the horse's head abreast of the steer's flank. As they galloped the riders uttered strange, long-drawn cries, evidently of Indian origin. Round the corral rushed the steer, and, after it passed the door on the opposite side and began to return toward its starting-point and saw the other cattle ahead, it put on speed. Then the outside rider raced forward and at the same moment wheeled inward, pinning the steer behind the horns and either by the neck or shoulder against the rough, yielding boughs with which the corral was lined. Instantly the other horseman pressed the steer's hind quarters outward, so that it found itself not only checked, but turned in the opposite direction. Again it was urged into a gallop, the calling horsemen following and repeating their performance. The steer was thus turned three times. After the third turning the gate which it had passed was opened and it trotted out.

A dozen times different pairs of riders performed the feat with different steers. It was a fine exhibition of daring prowess and of good training in both the horses and the riders. Of course, if it had not been for the lining of the inner fence with limber poles, the steer would have been killed or crippled—we saw one of them injured, as it was. The horse, which entered heartily into the spirit of the chase, had to crash straight into the fence, nailing the steer and bringing it to a standstill in the midst of its headlong gallop. Once or twice at the critical moment the rider was not able to charge quickly enough; and when the steer was caught too far back it usually made its escape and rejoined the huddle of cattle from which it had been cut out. The men were riders of such skill that

shaking them in their seats was impossible, no matter how quickly the horse turned or how violent the shocks were; nor was a single horse hurt in the rough play. It was a wild scene, and an exhibition of prowess well worth witnessing.

Other exhibitions of horsemanship followed, including the old feat of riding a bull. The bull, a vicious one, was left alone in the ring, and his temper soon showed signs of extreme shortness as he pawed the dirt, tossing it above his shoulders. Watching the chance when the bull's attention was fixed elsewhere, a man ran in and got to the little fence before the bull could charge him. Then, while the bull was still angrily endeavoring to get at the man, the corral gate opposite was thrown open and six or eight horsemen entered, riding with quiet unconcern. The bull was obviously not in the least afraid of the footman, whereas he had a certain feeling of respect for the horsemen. Two of the latter approached him. One got his rope over the bull's horns, and the other then dexterously roped the hind legs. The footman rushed in and seized the tail, and the bull was speedily on his side. Then a lean, slab-sided, rather frowzy-looking man, outwardly differing in no essential respect from the professional bronco-buster of the Southwest, slipped from the spectators' seats into the ring. A saddle was girthed tight on the bull, and a rope ring placed round his broad chest so as to give the rider something by which to hang. The lassos upon him were cast loose, and he rose, snorting with rage and terror. If he had thrown the man, the horsemen would have had to work with instantaneous swiftness to save his life. But all the bull's furious bucking and jumping could not unseat the rider. The horsemen began to tease the animal, flapping red blankets in his

face, and luring him to charges which they easily evaded. Finally they threw him again, took off his saddle and turned him loose, and at the same time some steers were driven into the corral to serve as company for him. A couple of the horsemen took him out of the bunch and raced him round the corral, turning him when they wished by pressing him against the pole corral lining, thus repeating the game that had already been played with so many of the steers. In his case it was, of course, more dangerous. But they showed complete mastery, and the horses had not the slightest fear, nailing him flat against the wall with their chests, and spinning him round when they struck him on occasions when he was trying to make up his mind to resist.

Meanwhile the bull-rider passed his hat among the spectators, who tossed silver pieces into it—thus marking the fundamental difference between the life we were witnessing and our own Western ranch life. In Chile, with its aristocratic social structure, there is a wide gulf between the gentry and the ranch-hands; whereas in the democratic life of our own cow country the ranch-owner has, more often than not, at one time been himself a ranch-hand.

After the sports in the corral were finished eight or ten of the *huasos* appeared on big horses at the bar of which I have spoken, and took part in a sport which was entirely new to me. Two champions would appear side by side or half facing each other, at the bar. Each would turn his horse's head until it hung over the bar as they half fronted each other, on the same side of the bar. The object was for each man to try to push his opponent away from the bar and then shove past him, usually carrying his opponent with him. Sometimes it

was a contest of man against man. Sometimes each would have two or three backers. No one could touch any other man's horse, and each drove his animal right against his opponent. The two men fronting each other at the bar kept their horses head-on against the bar; the others strove each to get his horse's head between the body of one of his opponents and the head of that opponent's horse. They then remained in a knot for some minutes, the riders cheering the horses with their strange, wild, Indian-like cries, while the horses pushed and strained. Usually there was almost no progress on either side at first. It would look as though not an inch was gained. Gradually, however, the horses on one side or the other got an inch or two or three inches advantage of position by straining and shoving. Suddenly the right vantage-point was attained. There was an outburst of furious shouting from the riders. The horses of one side with straining quarters thrust their way through the press, whirling round or half upsetting their opponents, and rushed down alongside the bar. Why the men's legs were not broken I could not say. On this occasion all the men were good-natured. But it was a rough sport, and I could well credit the statement that, if there were bad blood to gratify, the chances were excellent for a fight.

After the sports we motored down to a great pasture on one side of a lake, beyond which rose lofty mountains. Then we returned to the ranch-house itself—a huge, white, single-storied house with a great courtyard in the middle and wings extending toward the stable, the saddle-rooms, and the like. It was a house of charm and distinction; the low building—or rather group of buildings with galleries and colonnades connecting them—being in the old native style, an out-

growth of the life and the land. After a siesta our hosts led us out across a wide garden brilliant and fragrant with flowers, to the deep, cool shade of a row of lofty trees, where stood a long table spread with white linen and laden with silver and glass; and here we were served with a delicious and elaborate breakfast—the Chilean breakfast, that of Latin Europe, for in most ways the life of South America is a development of that of Latin Europe, and much more closely kin to it than it is to the life of the English-speaking peoples north of the Rio Grande.

In the afternoon we drove back to the railroad. At one point of our drive we were joined by a rider who had taken part in the morning's sports. He galloped at full speed beside the rushing motor-car, waving his hat to us and shouting good-by. He was a tall, powerfully built, middle-aged man, with fine, clean-cut features; his brightly colored mantle streamed in the wind, and he sat in the saddle with utter ease while his horse tore over the ground alongside us. He was a noble figure, and his farewell to us was our last glimpse of the wild, old-time *huaso* life.

VI

ACROSS THE ANDES AND NORTHERN PATAGONIA

As the great chain of the Andes stretches southward its altitude grows less, and the mountain wall is here and there broken by passes. When the time came for me to leave Chile I determined to cross the Andes by the easiest and most accessible and one of the most beautiful of these comparatively low passes. At the other end of the pass, on the Argentine or Patagonian side, we were to be met by motor-cars, sent thither by my considerate hosts, the governmental authorities of Argentina.

From Santiago we went south by rail to Puerto Varas. The railway passed through the wide, rolling agricultural country of central Chile, a country of farms and prosperous towns. As we went southward we found ourselves in a land which was new in the sense that our own West is new. Middle and southern Chile were in the hands of the Indians but a short while since. We were met by fine-looking representatives of these Araucanian Indians, all of them now peaceable farmers and stock-growers, at a town of twenty or thirty thousand people where there was not a single white man to be found a quarter of a century ago. Our party included, among others, Major Shipton, U. S. A., the military aide to our legation at Buenos Ayres, my son Kermit, and several kind Chilean friends.

We reached our destination, Puerto Varas, early in the morning. It stands on the shore of a lovely lake. There has been a considerable German settlement in

middle and southern Chile, and, as everywhere, the Germans have made capital colonists. At Puerto Varas there are two villages, mainly of Germans, one Protestant and the other Catholic. We were made welcome and given breakfast in an inn which, with its signs and pictures, might have come from the Fatherland. Among the guests at the breakfast, in addition to the native Chilean Intendente, were three or four normal-school teachers, all of them Germans—and evidently uncommonly good teachers, too. There were school-children, there were citizens of every kind. Many of the Germans born abroad could speak nothing but German. The children, however, spoke Spanish, and in some cases nothing but Spanish. Here, as so often in the addresses made to me, special stress was laid upon the fact that my country represented the cause of civil and religious liberty, of the absolute equality of treatment of all men without regard to creed, and of social and industrial justice; in short, the cause of orderly liberty in body, soul, and mind, in things intellectual and spiritual no less than in things industrial and political; the liberty that guarantees to each free, bold spirit the right to search for truth without any check from political or ecclesiastical tyranny, and that also guarantees to the weak their bodily rights as against any man who would exploit or oppress them.

We left Puerto Varas by steamer on the lake to begin our four days' trip across the Andes and through northern Patagonia, which was to end when we struck the Argentine Railway at Neuquen. This break in the Andes makes an easy road, for the pass at its summit is but three thousand feet high. The route followed leads between high mountains and across lake after lake, and the scenery is as beautiful as any in the world.

The first lake was surrounded by a rugged, forest-clad mountain wilderness, broken here and there by settlers' clearings. Wonderful mountains rose near by; one was a snow-clad volcano with a broken cone which not many years ago was in violent eruption. Another, even more beautiful, was a lofty peak of virginal snow. At the farther end of the lake we lunched at a clean little hotel. Then we took horses and rode for a dozen miles to another lake, called Esmeralda or Los Santos. Surely there can be no more beautiful lake anywhere than this! All around it are high mountains, many of them volcanoes. One of these mountains to the north, Punti Agudo, rises in sheer cliffs to its soaring summit, so steep that snow will hardly lie on its sides. Another to the southwest, called Tronador, the Thunderer, is capped with vast fields of perpetual snow, from which the glaciers creep down to the valleys. It gains its name of thunderer from the tremendous roaring of the shattered ice masses when they fall. Out of a huge cave in one of its glaciers a river rushes, full grown at birth. At the eastern end of this lake stands a thoroughly comfortable hotel, which we reached at sunset. Behind us in the evening lights, against the sunset, under the still air, the lake was very beautiful. The peaks were golden in the dying sunlight, and over them hung the crescent moon.

Next morning, before sunrise, we were riding eastward through the valley. For two or three miles the ride suggested that through the Yosemite, because of the abruptness with which the high mountain walls rose on either hand, while the valley was flat, with glades and woods alternating on its surface. Then we got into thick forest. The trees were for the most part giant beeches, but with some conifers, including a

rather small species of sequoia. Here and there, in the glades and open spaces, there were masses of many-hued wild flowers; conspicuous among them were the fuchsias.

A dozen miles on we stopped at another little inn. Here we said good-by to the kind Chilean friends who had accompanied us thus far, and were greeted by no less kind Argentine friends, including Colonel Reybaud of the Argentine army, and Doctor Moreno, the noted Argentine scientist, explorer, and educator. Then we climbed through a wooded pass between two mountains. Its summit, near which lies the boundary-line between Chile and Argentina, is somewhere in the neighborhood of three thousand feet high; and this is the extreme height over which at this point it is necessary to go in traversing what is elsewhere the mighty mountain wall of the Andes. Here we met a tame guanaco (a kind of llama) in the road; it strolled up to us, smelled the noses of the horses, which were rather afraid of it, and then walked on by us. From the summit of the pass the ground fell rapidly to a wonderfully beautiful little lake of lovely green water. This little gem is hemmed in by sheer-sided mountains, densely timbered save where the cliffs rise too boldly for even the hardiest trees to take root. As with all these lakes, there are many beautiful waterfalls. The rapid mountain brooks fling themselves over precipices which are sometimes so high that the water reaches the foot in sheets of wavering mist. Everywhere in the background rise the snow peaks.

We crossed this little lake in a steam-launch, and on the other side found the quaintest wooden railway, with a couple of rough hand-cars, each dragged by an ox. In going downhill the ox is put behind the car,

which he holds back with a rope tied to his horns. We piled our baggage on one car, three or four members of the party got on the other, and the rest of us walked for the two miles or so before we reached the last lake we were to traverse—Nahuel Huapi. Here there happened one of those incidents which show how the world is shrinking. Three travellers, evidently Englishmen, were at the landing. One of them came up to me and introduced himself, saying: "You won't remember me; when I last saw you, you were romping with little Prince Sigurd, in Buckingham Palace at the time of the King's funeral; I was in attendance on [naming an august lady]; my name is Herschel, Lord Herschel." I recalled the incident at once. On returning from my African trip I had passed through western Europe, and had been most courteously received. In one palace the son and heir—whom I have called Sigurd, which was not his name—was a dear little fellow, very manly and also very friendly; and he reminded me so of my own children when they were small that I was unable to resist the temptation of romping with him, just as I had romped with them. A month later, when as special ambassador I was attending King Edward's funeral, I called at Buckingham Palace to pay my respects, and was taken in to see the august lady above alluded to. The visit lasted nearly an hour, and toward the end I heard little squeaks and sounds in the hall outside, for which I could not account. Finally I was dismissed, and, on opening the door, there was little Sigurd, with his nurse, waiting for me. He had heard that I was in the palace, and had refused to go down to dinner until he had had a play with me; and he was patiently and expectantly waiting outside the door for me to appear. I seized

him, tossed him up, while he shouted gleefully, caught him, and rolled him on the floor, quite forgetting that any one was looking on; and then, in the midst of the romp, happening to look up, I saw the lady on whom I had been calling, watching the play with much interest, with her equally interested two brothers, both of them sovereigns, and her lords in waiting; she had come out to see what the little boy's laughter meant. I straightened up, whereupon the little boy's face fell, and he anxiously inquired: "But you're not going to stop the play, are you?" Of all this my new-found friend reminded me. It was a far cry in space and in surroundings, from where he and I had first met to the Andes that border Patagonia. He was a man of knowledge and experience, and the half-hour I spent with him was most pleasant.

At Nahuel Huapi we were met by a little lake steamer, on which we spent the next four hours. The lake is of bold and irregular outline, with many deep bays, and with mountain walls standing as promontories between the bays. For a couple of hours the scenery was as beautiful as it had been during any part of the two days, especially when we looked back at the mass of snow-shrouded peaks. Then the lake opened, the shores became clear of woods, the mountains lower, and near the eastern end, where there were only low rolling hills, we came to the little village of Bariloche.

Bariloche is a real frontier village. Forty years previously Doctor Moreno had been captured by Indians at this very spot, had escaped from them, and after days of extraordinary hardship had reached safety. He showed us a strange, giant pine-tree, of a kind different from any of our northern cone-bearers, near

which the Indians had camped while he was prisoner with them. He had persuaded the settlers to have this tree preserved, and it is still protected, though slowly dying of old age. The town is nearly four hundred miles from a railway, and the people are of the vigorous, enterprising frontier type. It was like one of our frontier towns in the old-time West as regards the diversity in ethnic type and nationality among the citizens. The little houses stood well away from one another on the broad, rough, faintly marked streets. In one we might see a Spanish family, in another blond Germans or Swiss, in yet another a family of gaucho stock looking more Indian than white. All worked and lived on a footing of equality, and all showed the effect of the wide-spread educational effort of the Argentine Government, an effort as marked as in our own country, although in the Argentine it is made by the nation instead of by the several states. We visited the little public school. The two women teachers were, one of Argentine descent, the other the daughter of an English father and an Argentine mother—the girl herself spoke English only with difficulty. They told us that the Germans had a school of their own, but that the Swiss and the other immigrants sent their children to the government school with the children of the native Argentines. Afterward I visited the German school, where I was welcomed by a dozen of the German immigrants—men of the same stamp as those whom I had so often seen, and whom I so much admired and liked, in our own Western country. I was rather amused to see in this school, together with a picture of the Kaiser, a very large picture of Martin Luther, although about a third of the Germans were Catholics; their feelings as Germans seemed in this

instance to have overcome any religious differences, and Martin Luther was simply accepted as one of the great Germans whose memory they wished to impress on the minds of their children. In this school there was a good little library, all the books being, of course, German; it was the only library in the town.

That night we had a very pleasant dinner. Our host was a German. Of the two ladies who did the honors of the table, one was a Belgian, the wife of the only doctor in Bariloche, and the other a Russian. In our own party, aside from the four of us from the United States, there were Colonel Reybaud, of the Argentine army, my aide, and a first-class soldier; Doctor Moreno, who was as devoted a friend as if he had been my aide; and three other Argentine gentlemen —the head of the Interior Department, the governor of Neuquen, and the head of the Indian Service. Among the other guests was a man originally from County Meath, and a tall, blond, red-bearded Venetian, a carpenter by trade. After a while we got talking of books, and it was fairly startling to see the way that polyglot assemblage brightened when the subject was introduced, and the extraordinary variety of its taste in good literature. The men began eagerly to speak about and quote from their favorite authors—Cervantes, Lope de Vega, Camoëns, Molière, Shakespeare, Virgil, and the Greek dramatists. Our host quoted from the "Nibelungenlied" and from Homer, and at least two-thirds of the men at the table seemed to have dozens of authors at their tongues' ends. But it was the Italian carpenter who capped the climax, for when we touched on Dante he became almost inspired and repeated passage after passage, the majesty and sonorous cadence of the lines thrilling him so that

his listeners were almost as much moved as he was. We sat thus for an hour—an unexpected type of *Kaffee Klatsch* for such an outpost of civilization.

Next morning at five we were off for our four-hundred-mile drive across the Patagonian wastes to the railway at Neuquen. We had been through a stretch of scenery as lovely as can be found anywhere in the world—a stretch that in parts suggested the Swiss lakes and mountains, and in other parts Yellowstone Park or the Yosemite or the mountains near Puget Sound. In a couple of years the Argentines will have pushed their railway system to Bariloche, and then all tourists who come to South America should make a point of visiting this wonderfully beautiful region. Doubtless in the end it will be developed for travellers much as other regions of great scenic attraction are developed. Thanks to Doctor Moreno, the Argentine end of it is already a national park; I trust the Chilean end soon will be.

We left Bariloche in three motor-cars, knowing that we had a couple of hard days ahead of us. After skirting the lake for a mile or two we struck inland over flats and through valleys. We had to cross a rapid river at a riffle where the motor-cars were just able to make it. The road consisted only of the ruts made by the passage of the great bullock-carts, and often we had to go alongside it, or leave it entirely where at some crossing of a small stream the ground looked too boggy for us to venture in with the motor-cars. Three times in making such a crossing one of the cars bogged down, and we had hard work in getting out. In one case it caused us two hours' labor in building a stone causeway under and in front of the wheels—repeating what I had helped do not many months before in

Arizona, when we struck a place where a cloudburst had taken away the bridge across a stream and a good part of the road that led up to it on either side.

In another place the leading car got into heavy sand and was unable to move. A party of gauchos came loping up, and two of them tied their ropes to the car and pulled it backward onto firm ground. These gauchos were a most picturesque set. They were riding good horses, strong and hardy and wild, and the men were consummate horsemen, utterly indifferent to the sudden leaps and twists of the nervous beasts they rode. Each wore a broad, silver-studded belt, with a long knife thrust into it. Some had their trousers in boots, others wore baggy breeches gathered in at the ankle. The saddles, unlike our cow-saddles, had no horns, and the rope when in use was attached to the girth ring. The stirrups were the queerest of all. Often they were heavy flat disks, the terminal part of the stirrup-leather being represented by a narrow metal, or stiff leather, bar a foot in length. A slit was cut in the heavy flat disk big enough to admit the toe of the foot, and with this type of stirrup, which to me would have been almost as unsatisfactory as no stirrup at all, they sat their bucking or jumping horses with complete indifference.

It was gaucho land through which we were travelling. Every man in it was born to the saddle. We saw tiny boys not only riding but performing all the duties of full-grown men in guiding loose herds or pack-animals. No less characteristic than these daredevil horsemen were the lines of great two-wheeled carts, each dragged by five mules, three in the lead, with two-wheelers, or else perhaps drawn by four or six oxen. For the most part these carts were carrying wool or hides. Occasion-

ally we came on great pastures surrounded by wire fences. Elsewhere the stony, desolate land lay as it had lain from time immemorial. We saw many flocks of sheep, and many herds of horses, among which piebald horses were unusually plentiful. There were a good many cattle, too, and on two or three occasions we saw flocks of goats. It was a wild, rough country, and in such a country life is hard for both man and beast. Everywhere along the trail were the skeletons and dried carcasses of cattle, and occasionally horses. Yet there were almost no carrion birds, no ravens or crows, no small vultures, although once very high up in the air we saw a great condor. Indeed, wild life was not plentiful, although we saw ostriches—the South American rhea—and there was an occasional guanaco, or wild llama. Foxes were certainly abundant, because at the squalid little country stores there were hundreds of their skins and also many skunk-skins.

Now and then we passed ranch-houses. There might be two or three fairly close together, then again we might travel for twenty miles without a sign of a habitation or a human being. In one place there was a cluster of buildings and a little schoolhouse. We stopped to shake hands with the teacher. Some of the ranch-houses were cleanly built and neatly kept, shade-trees being planted round about—the only trees we saw during the entire motor journey. Other houses were slovenly huts of mud and thatch, with a brush corral near by. Around the houses of this type the bare dirt surface was filthy and unkempt, and covered with a litter of the skulls and bones of sheep and oxen, fragments of skin and hide, and odds and ends of all kinds, foul to every sense.

Every now and then along the road we came to a

solitary little store. If it was very poor and squalid, it was called a *pulpería;* if it was large, it was called an *almacén.* Inside there was a rough floor of dirt or boards, and a counter ran round it. At one end of the counter was the bar, at which drinks were sold. Over the rest of the counter the business of the store proper was done. Hats, blankets, horse-gear, rude articles of clothing, and the like were on the shelves or hung from rings in the ceiling. Sometimes we saw gauchos drinking at these bars—rough, wild-looking men, some of them more than three parts Indian, others blond, hairy creatures with the northern blood showing obviously. Although they are dangerous men when angered, they are generally polite, and we, of course, had no trouble with them. Hides, fox-skins, and the like are brought by them for sale or for barter.

Order is kept by the mounted territorial police, an excellent body, much like the Canadian mounted police and the Pennsylvania constabulary. These men are alert and soldierly, with fine horses, well-kept arms, and smart uniforms. Many of them were obviously mainly, and most of them were partly, of Indian blood. I think that Indian blood is on the whole a distinct addition to the race stock when the ancestral Indian tribe is of the right kind. The acting president of the Argentine during my visit, the vice-president, a very able and forceful man, wealthy, well educated, a thorough statesman and man of the world, and a delightful companion, had a strong strain of Indian blood in him.

The ordinary people we met used "Indian" and "Christian" as opposite terms, having cultural rather than theological or racial significance, this being customary in the border regions of temperate South America. In one place where we stopped four Indians

came in to see us. The chief or head man looked like a thorough Indian. He might have been a Sioux or a Comanche. One of his companions was apparently a half-breed, showing strong Indian features, however. A third had a full beard, and, though he certainly did not look quite like a white man, no less certainly he did not look like an Indian. The fourth was considerably more white than Indian. He had a long beard, being dressed, as were the others, in shabby white man's garb. He looked much more like one of the poorer class of Boers than like any Indian I have ever seen. I noticed this man talking to two of the mounted police. They were smart, well-set-up men, thoroughly identified with the rest of the population, and regarding themselves and being regarded by others as on the same level with their fellow citizens. Yet they were obviously far more Indian in blood than was the unkempt, bearded white man to whom they were talking, and whom they and their fellows spoke of as an Indian, while they spoke of themselves, and were spoken of by others, as "Christians." "Indian" was the term reserved for the Indians who were still pagans and who still kept up a certain tribal relation. Whenever an Indian adopted Christianity in the excessively primitive form known to the gauchos, came out to live with the whites, and followed the ordinary occupations, he seemed to be promptly accepted as a white man, no different from any one else. The Indians, by the way, now have property, and are well treated. Nevertheless, the pure stock is dying out, and those that survive are being absorbed in the rest of the population.

The various accidents we met with during the forenoon delayed us, and we did not take breakfast—or, as we at home would call it, lunch—until about three

o'clock in the afternoon. We had then halted at a big group of buildings which included a store and a government telegraph office. The store was a long, white-washed, one-story house, the bedrooms in the rear, and all kinds of outbuildings round about. In some corrals near by a thousand sheep were being sheared. Breakfast had been long deferred, and we were hungry. But it was a feast when it did come, for two young sheep or big lambs were roasted whole before a fire in the open, and were then set before us; the open-air cook was evidently of almost pure Indian blood.

On we went with the cars, with no further accidents and no trouble except once in crossing a sand belt. The landscape was parched and barren. Yet its look of almost inconceivable desolation was not entirely warranted, for in the flats and valleys water could evidently be obtained a few feet below the surface, and where it was pumped up anything could be grown on the soil.

But, unless thus artificially supplied, water was too scarce to permit any luxuriance of growth. Here and there were stretches of fairly good grass, but on the whole the country was covered with dry scrub a foot or two high, rising in clumps out of the earth or gravel or sand. The hills were stony and bare, sometimes with flat, sheer-sided tops; and the herds of half-wild horses and of cattle and sheep, and the even wilder riders we met, and the squalid little ranch-houses, all combined to give the landscape a peculiar touch.

As evening drew on, the harsh, raw sunlight softened. The hills assumed a myriad tints as the sun sank. The long gloaming followed. The young moon hung overhead, well toward the west, and just on the edge of the horizon the Southern Cross stood upside down. Then

clouds gathered, boding a storm. The night grew black, and on we went through the darkness, the motormen clutching the steering-wheels and peering anxiously forward as they strove to make out the ruts and faint road marks in the shifting glare of the headlights. The play of the lightning and the rolling of the thunder came near and nearer. We were evidently in for a storm, which would probably have brought us to a complete halt, and we looked out for a house to stop at. At 10.15 we caught a glimpse of a long white building on one side of the road. It was one of the stores of which I have spoken. With some effort we roused the people, and after arranging the motor-cars we went inside. They were good people. They got us eggs and coffee, and, as we had a cold pig, we fared well. Then we lay down on the floor of the store and on the counters and slept for four hours.

At three I waked the sleepers with the cry that in bygone days on the Western cattle plains had so often roused me from the heavy slumber of the men of the round-up. It was the short November night of high southern latitudes. Dawn came early. We started as soon as the faint gray enabled us to see the road. The stars paled and vanished. The sunrise was glorious. We came out from among the hills on to vast barren plains. Hour after hour, all day long, we drove at speed over them. The sun set in red and angry splendor amid gathering clouds. When we reached the Rio Negro the light was dying from the sky, and a heavy storm was rolling toward us. The guardians of the rope ferry feared to try the river, with the storm rising through the black night; but we forced them to put off, and we reached the other shore just before the wind smote us, and the rushing rain drove in our faces.

VII

WILD HUNTING COMPANIONS

In the days when I lived and worked on a cattle-ranch on the Little Missouri, I usually hunted alone; and, if not, my companion was one of the cow-hands, unless I was taking out a guest from the East. On some of my regular hunting trips in the Rockies I went with one or more of my ranch-hands—who were valued friends and fellow workers. On others of these trips I went with men who were either temporarily, like John Willis, or permanently, like Tazewell Woody and John Goff, professional guides and hunters. In Africa I sometimes hunted with some of the settlers, and often alone or with my son Kermit; but even more frequently with either Cuninghame or Tarlton, the former for many years a professional elephant-hunter, and the latter by choice and preference a lion-hunter. Both of them, I think I may say, became permanently my friends as the result of the trip.

Often, however, my companions were not white men, but either half-breeds and people of mixed blood or else wild natives of the wild lands over which the great game roamed. To some of these men I became really attached. Not a few of them showed a courage and loyalty and devotion to duty which would have put to shame very many civilized men. Almost all of them at times did or said things that were very interesting because of the glimpses they gave into souls that really belong to a totally different age from that in which I and my friends of civilized lands are living.

December, 1913, and January, 1914, I spent in the remote interior of Brazil, on and near various rivers which form the headwaters of the mighty Paraguay. It is still a frontier country; the province is known as the Matto Grosso, the province of the great wooded wilderness. Yet it has a civilized and Christian history which runs back for over a century. It is on the eve of striking material development, and, nevertheless, it is still primitive with a primitiveness half that of a belated Europe, half that of a savagery struggling over the border-line into an exceedingly simple civilization. Out of these diverse and conflicting elements, and with a century of comparative isolation behind it, the land has produced a far more distinctive and peculiar life than our own frontier communities ever had the chance to develop. It would be difficult to find in any country more charming and better-bred men than some of the gentlemen, the great ranchmen and the political and social leaders in city life, whose generous hospitality made me their debtor. But the ordinary folk, and especially the Caboclos, the peasantry, although with many sterling qualities, were of a type wholly different from anything to be found either in Europe or in temperate North America.

The land is largely composed of the pantanals, the flat, wide-stretching marshes through which the Paraguay and its affluents wind. Where the land is low it is covered with papyrus and water-grass; if a few feet higher, with open palm forest. It offers fine pasturage for the herds of cattle. In addition there are mountains and belts of tropic jungle and forest, and to the north rises the sandy central table-land of Brazil. There are no railroads, and no highroads of any length for wheeled vehicles. The rivers are the highways. Na-

tive boats, with palm-thatch houses and cooking-ovens of red earth on the decks, drift down them and are poled or towed up them. A few light-draft steamers, running every week or fortnight, connect the widely scattered little cities. They are quaint, picturesque little cities, without a wheeled vehicle except the water-carts. The one-story houses enclose open courtyards. The walls are thick, and the windows and doors very high, so as to let whatever coolness the night air carries fan the sleepers in their hammocks. In the bigger houses there are beds in the guest-chambers; but the hammock is really the bed; and in the inns the bed-rooms have rings in the walls from which the traveller hangs the hammock he has brought with him. After nightfall the men sit at little tables under the trees in the public squares or outside the taverns, and through the open doors and windows of the houses, in the mysterious darkness, are the half-seen figures of girls and women; and stringed instruments tinkle in the still tropic night.

When Portugal still ruled Brazil, the first of these cities was founded, toward the end of the eighteenth century. At that time it could be reached only by a long voyage of peril and hardship up the Amazon and the Madeira, and then by muleback. No place in the world is now so remote from civilization as this little capital of the "Great Wilderness" then was; but its life was fervent under the torrid sky. Governors, generals, priests were there, slave-owners and gold-seekers; killers of men and lovers of women. There was a palace and a cathedral and a fort, adorned with paintings and carvings. All are in ruins now; the rank vegetation of the tropics, beautiful and lethal, has covered them and twisted them asunder; for the strange

little one-time capital city is dead, and those that dwelt therein have left it.

The next comers followed a route that led from the opposite direction, the south. These were the Paolistas. At São Paulo, almost under the Tropic of Cancer, the Portuguese conquerors married with the women of the native Indians, and made first slaves and then soldiers of men from many Indian tribes. They all became welded together into one people, speaking Portuguese, but largely, and probably mainly, Indian by blood; and being of various martial stocks, with the morals of the viking age, they grew into a community of free-booters whose raiding expeditions, carried on with the utmost energy, daring, and ruthlessness, spread terror far and wide. Early in the nineteenth century these hardy horsemen and boatmen, searching for gold, land, and slaves, penetrated to the headwaters of the Paraguay, and with their advent began the first rude change from mere savagery to that which held within it the germ of civilization.

Two or three of the ranches at which we stopped were provided with elaborate and even handsome ranch-houses and other buildings. One of them was owned by a wealthy and cultivated native proprietor. It was fitted with much stately luxury, and some comfort. Two others were owned by foreign corporations. Among the higher employees were men from Europe and the United States, and also "orientáls," as the men of Uruguay are always called—Uruguay being the "banda orientál," or eastern shore, of the Plate. These orientáls were as pure white as the Europeans and North Americans, and were of a high grade. The ordinary cow-hands on these two ranches were mostly Paraguayans, men of almost pure Indian blood, speak-

ing the Guarani tongue, which is the real home language of the peculiar and interesting little republic which takes its name from the great river. These particular ranches were on the borders of the Bolivian country, and along this frontier the conditions as regards order and international law are much what they were on the border between England and Scotland in the sixteenth century. The man who cannot protect his own life by his own fierce and wary prowess cannot exist under such conditions, and the cow-hands must be men recklessly ready to fight for their cattle. The Paraguayans of the class who sought employment in the western interior of Brazil bore a fighting, and somewhat murderous, reputation. They were a daredevil set, and under men of masterful type they did hard and dangerous work for their employers.

The ordinary ranches where we stopped were of a different type. The houses were of one story, with thick, white walls. The few rooms were furnished only with rough tables and benches and rings for the hammocks. The unglazed windows were fitted with solid wooden shutters. Outbuildings stood near by; one perhaps for a kitchen; sheds for skinning or for the few stores; cabins in which the ranch-hands lived with their families. Palm-trees, or bananas with huge, ragged leaves, or trees unlike any familiar to our experience, might stand near by, close to the big cow corrals. On the poorer ranches the houses were nothing but log skeletons thatched with palm-leaves.

On these ranches the "camaradas," the cow-hands, in whose company we hunted, were all native Brazilians, of the same type as the men whom subsequently we took with us on our voyage of exploration down the Rio da Dúvida to the Amazon. It was a simple,

primitive existence. All the industry was connected with the cattle or with cultivating the tropical vegetables and fruits of the garden. Two-wheeled ox-carts, each wheel taller than a man, carried hides and smoked flesh to the river-landing where native boats, or now and then light-draft steamers, were moored. After sunset the life went on outdoors, unless it rained, until bedtime. As it grew dusk the doorways and the unglazed windows, standing open, showed only empty darkness within. The cooking was done in pots, at small fires outside. Now and then some one played a guitar or banjo; or sang strange songs, light-hearted songs of dances, melancholy songs of love or of death, songs about the feats of men and of bulls and of famous horses; but always with something queer and barbaric as if they came from a time and a life immeasurably remote. Always the darkness shrouded from us the hot, furtive life we knew it held.

These poor country folk were on the whole a kindly, courteous race; it was pleasant to have them known as "camaradas" by the men of the upper class. They represented every shade of mixture among the three strains of Portuguese, Indian, and negro, and no color-line was drawn by the pure bloods of any of the three races. Whatever their blood, they lived alike and dressed alike. There were very curious customs among many of them, customs which were probably dying out, but which must surely have been imported from utter savagery, although they were all Christians and all spoke Portuguese. As an instance, a number of them, from out-of-the-way places, but including at least one man who was of practically pure white blood, had the edges of their front teeth filed so as to make them semicircular.

When we hunted we would leave our camp, or the ranch-house where we had slept, before dawn. The hot sun flamed red above the marshes or sent long shafts of crimson light between the palm-trunks. It might be evening before we returned. The heat of the day would be spent in the shade near a pond, and often our dusky companions would then get into long conversations with us. These camaradas usually rode little stallions, but sometimes one would be mounted on a trotting ox, which was guided by a string through the nostrils. Half-starved dogs followed behind. The men carried spears, rarely firearms. Their hats and clothes, their saddles and bridles seemed on the point of falling to pieces. On their bare feet they wore rusty spurs, and the stirrups were iron rings, in which they thrust the big toe and the toe next it. But no antic of the half-broken horse and no difficulty in the jungle trail made the slightest impression on them. They were only fairly good hunters and trailers, and when in thick forest Kermit with his compass could find his way better than they could. A few of them hunted the jaguar and also the cashada, the big peccary which goes in herds and is aggressive and truculent; but most of them let the dangerous big cat and the dangerous little hogs severely alone, and hunted only the tapir, deer, and capybara. The rare jaguars that become man-eaters, the occasional giant anacondas, the deadly poisonous snakes, and the cashadas were all the subjects of superstitious tales. They were shy about telling these stories to persons who might laugh, but if assured of sympathy would occasionally unbend. Then they would describe how man-eating jaguars were warlocks, able to enslave the souls of those they slew; so that each murdered man thenceforth served the

dreadful beast that had eaten him, guarded him from danger, and guided him to fresh victims; or they would tell a ghost-story I never quite understood, about a seemingly harmless ghost, white and without any arms, which in the night-time rode the biggest peccary of the herd. In these tales the giant ant-eater always appeared as a comic character, a figure of fun, although with a somewhat grim ability to take care of himself; it was he who would meet drunken men and embrace them with his unpleasant claws and then hurry them home.

The camaradas whom we took with us on our exploring trip were mostly drawn from among these country folk of the ranches, although two or three came from the coast towns. The two best hunters were Antonio the Pareçis, a full-blood Pareçis Indian, and Antonio Correa, an intelligent, daredevil mulatto, probably with also a dash of Indian blood. The latter, like several other of our men, had lived among the wild Indians and had adopted some of their traits, including one exceedingly odd matter of dress. Antonio the Pareçis, a kindly, faithful, stupid soul, had abandoned his tribe, come into the settlements, and married a dark mulattress—the queer result being that according to the custom of the country their children would be regarded as civilized and therefore white. Antonio Correa was one of the two best and most trustworthy men on the trip; uncomplaining, hard-working, and undaunted in time of peril.

When, during our descent of the unknown river, we reached the first rubber man's house he expressed with curious eloquence the feeling we all had at hearing around us again the voices of men and women, and knowing that the chance of utter disaster was over;

instead of camping at night in the midst of dangerous rapids, while every hour of the day carried its menace, and there always loomed ahead the danger of death in any one of a dozen possible ways, from famine to fever and dysentery, and from drowning to battle with Indians. When we reached the first rubber-gatherer's store the delicacy which all our men most eagerly coveted was condensed milk, and to my amused horror they solemnly proceeded each to eat a canful of the sweet and sticky luxury.

Of all my wilder hunting companions those to whom I became most attached—although some of them were the wildest of all—were those Kermit and I had with us in Africa for eleven months. Disregarding a very problematical Christian, these were either Mohammedans or heathens. However, after having been in our employ a little while, and after having adopted the fez, jersey, and short trousers—and, as a matter of pure pride and symbolism, boots—they all regarded themselves as of an elevated social status, and openly looked down on the unregenerated "shenzis" or natives who were still in the kirtle-of-banana-leaves cultural stage. They represented many different tribes. Some of them were file-toothed cannibals. Many of them had come from long distances; for—as philanthropists will do well to note—being even a porter in a white man's service in British East Africa or Uganda or the Soudan meant an amount of pay and a comfort of living and (although this, I think, was subordinate in their minds) a justness of treatment which they could by no possibility achieve in their own homes under native conditions. As for the personal attendants, the gun-bearers, tent-boys, and saises, as well as the head men and askaris, or soldiers, they felt as far above the porters

as the latter did above the shenzis. The common tongue was Swahili, a negro-Arab dialect, originally spoken by the descendants, mainly negro in blood, of the Arab conquerors, traders, and slave-raiders of Zanzibar. This is a lingo found over much of central Africa. But only a few of our men were Swahilis by blood.

Of course most of them were like children, with a grasshopper inability for continuity of thought and realization of the future. They would often act with an inconsequence that was really puzzling. Dog-like fidelity, persevered in for months, would be ended by a fit of resentment at something unknown, or by a sheer volatility which made them abandon their jobs when it was even more to their detriment than to ours. But they had certain fixed standards of honor; the porter would not abandon his load, the gun-bearer would not abandon his master when in danger from a charging beast—although, unless a first-class man, he might at that critical moment need discipline to restrain his nervous excitability. They appreciated justice, but they were neither happy nor well behaved unless they were under authority; weakness toward them was even more ruinous than harshness and overseverity.

The personal attendants of Kermit and myself established a kind of "chief petty officers' mess" in the caravan. Not only his own boys, but mine, really cared more for Kermit than they did for me. This was partly because he spoke Swahili; partly because he could see game, follow its tracks, and walk as I could not; and partly because he exercised more strict control over his men and yet more thought and care in giving them their pleasures and rewards. I was apt to become amused and therefore too lenient in dealing

with grasshopper-like failings—which was bad for the grasshoppers themselves; and, moreover, I was apt to announce to a man who had deserved well that he should receive so many rupees at the end of the trip, which to him seemed a prophecy about the somewhat remote future, whereas Kermit gave less, but gave it in more immediate form, such as sugar or tea, and rupees to be expended in the first Indian or Swahili trader's store we met; on which occasions I would see Kermit head a solemn procession of both his followers and mine to the store, where he would superintend their purchases, not only helping them to make up vacillating minds but seeing that they were not cheated.

An exception was my head tent-boy, Ali. He had a good deal of Arab blood in him, he spoke a little English, he was really intelligent, he was an innately loyal soul, and he was keenly alive to the honor of being the foremost attendant of the head of the expedition. He was distinctly an autocrat to the second tent-boy whose tenure was apt to be short, and he regarded Somalis with professional rivalry and distrust. He always did his work excellently, and during the eleven months he was with me I never had to correct or rebuke him, and whenever I had a bout of fever he was devotion itself. Once, while at a friend's house, his Somali stole some silver from me, after which Ali always kept my silver himself with scrupulous honesty. I still now and then get a letter from him, but as the letters are sent through some professional Hindoo scribe they are of value chiefly as tokens of affection. The last one, written in acknowledgment of a gift sent him, contained a rather long letter in Swahili, a translation into Arabic, and then a would-be translation into English, which, however, went no further than

the cumulative repetition of all the expressions of ceremonious regard known to the scribe.

My head gun-bearer, named Hartbeest—Kongoni—also did his work so well that I never had to reprove him; he was cool and game, a good tracker and tireless walker. But the second gun-bearer, Gouvimali, although a cheerful and willing soul, tended to get rattled when near dangerous animals. Unless his master is really in the grip of an animal, the worst sin a gun-bearer can commit, next to running away, is to shoot the gun he is carrying; for, if the master is fit to hunt dangerous game at all, it is he who must do the killing, and, if in a tight place, he must be able to count with absolute certainty on the gun-bearer's handing him a loaded rifle when his own has been fired. On one occasion I was covering a rhino which Kermit was trying to photograph. The beast was very close and seemed about to begin hostilities. Gouvimali became very much excited and raised his rifle to shoot. I overheard Kongoni chide him, and I spoke to him sharply, but he still kept the rifle at his shoulder; whereupon I slapped his face just before shooting the rhino. This prevented his firing and brought him to his senses, but was not a sufficient punishment. The really dreadful punishment would have been to send him back to the ranks of the porters. But I wished to give him another chance; so next morning I instructed Ali that he was to be my interpreter, and that Gouvimali was to be brought up for justice before my tent. To make it impressive, Kongoni and the second tent-boy were summoned to attend, which they did with pleased anticipation. But they were not alone. All of Kermit's attendants rushed gleefully over, including his two first-class gun-bearers, his camera-bearer, the wild

'Nmwezi ex-cannibal whom he had turned into a devoted and excellent tent-boy, and the cheerful Kikuyu savage who had taken naturally to being sais for his and my little mules. The sympathies of all of them were ostentatiously against the culprit, and they were prepared for the virtuous enjoyment characteristic of the orthodox sure-of-their-salvation at a heresy trial.

Court opened with me in my camp-chair in front of the tent. Ali stood beside me, erect with gratified horror, and eager to show that he was not merely an interpreter but a prosecutor and assistant judge. Abject Gouvimali stood in front, with head hanging. The others ranged themselves in a semicircle, and filled the function of a Greek chorus. The proceedings were as follows: I (with frowning majesty): "Tell Gouvimali he knows that I have treated him very, very well; besides his wages, I have given him tea and sugar and tobacco and a red blanket."

Ali translates with the thunderous eloquence of Cicero against Verres; Verres writhes.

Chorus (with hands raised at the thought of such magnificent generosity): "Oh, *what* a good Bwana!"

I (reproachfully): "Whenever I shot a lion or an elephant I gave him some silver rupees."

Ali translates this with a voice shaken by emotion over the human baseness that could forget such gifts.

Chorus (in ecstatic contemplation of my virtue): "Oh, *what* a generous Bwana!"

I (leaning forward toward the accused): "And yet he started to shoot at a rhinoceros the Bwana Merodadi [Dandy Master, the Master who was a dandy to shoot and ride and get game] was photographing."

Ali fairly hisses this statement; malefactor shudders.

Chorus (almost bereft of speech at the revelation of

a depravity of which they had never hitherto dreamed): "Hau! W-a-u!!"

I (severe, but melancholy): "You didn't stop until I had to slap your face."

Chorus (with unctuous relish): "The Bwana ought to have beaten you!"

I: "Do you wish to become a porter again? There's a Kavirondo porter very anxious to get your job." (Deceitfully concealing a vagueness of recollection about this aspirant, who had been pronounced worthless.)

Malefactor (overcome by suggestion of the semi-mythical Kavirondo rival): "Oh, Bwana, have me beaten, but keep me as gun-bearer!"

I (with regal beneficence): "Well, I'll fine you ten rupees; and if you make another break, out you go; and you're to do all Kongoni's gun-cleaning for a week." (Kongoni, endeavoring to look both austere and disinterested, pokes malefactor in back.)

Chorus (disappointed of a tragedy, but fundamentally kind-hearted): "What a merciful Bwana! And now Gouvimali will always be careful! Good Gouvimali!"

On another occasion, on the White Nile, I one day took with me, to show me game, two natives of a village near our camp. I shot a roan antelope. It was mortally wounded; one of the natives, the shenzis, saw it fall but said nothing and slipped away to get the horns and meat for himself. Later, Kongoni became suspicious, and very acutely—for he was not only a master of hunting craft but also possessed a sympathetic insight into the shenzi mind—led us to the spot and caught the offender, and a party of the villagers, red-handed. Kongoni and Gouvimali pounced on the faithless guide, while the others scattered; and

the sais, unable to resist having something to do with the fray, handed the led mule to a small naked boy, rushed forward, gave the captive a thump, and then returned to his mule. The offender was brought to camp and put under guard—evidently horribly afraid we would eat him instead of the now far-gone roan. Next day Kermit got home from his hunt before I did. When I reached camp I found Kermit sitting with a book and his pipe under a great tree, in his camp-chair. The captive was tied with a string to the huge tree trunk. He sat on the ground and uttered hollow groans whenever he thought they would be effective. At nightfall we released him, keeping his knife, which we required him to redeem with a chicken; and when he returned with the chicken we bade him give it to Kongoni, to whom we owed the discovery of the roan.

In some of the wilder and more lonely camps these body-servants were my only companions, together with some shenzi porters; at others Kermit was with me, also with his tail of devoted personal attendants. Where the game swarmed and no human beings existed for many leagues round about we built circular fences of thorns to keep out beasts of prey. The porters, chanting a monotonous refrain, brought in wood to keep the watch-fires going all night. Supper was cooked and eaten. Then we sat and listened to the fierce and eager life that went on in the darkness outside. Hoofs thundered now and then, there were snortings and gruntings, occasional bellowings or roarings, or angry whinings, of fear or of cruel hunger or of savage love-making; ever there was a skipping and running of beasts unseen; for out there in the darkness a game as old as the world was being played, a game without any rules, where the forfeit was death.

Generally the wild creatures were not so close even at these lonely camps, and we did not have to guard against attack, although there were always sentries and watch-fires, and we always slept with our loaded rifles beside us. After dinner the tent-boys and gun-bearers would talk and laugh, or tell stories, or listen while one of their number, Kermit's first gun-bearer, a huge, absolutely honest, coal-black negro from south of the Victorian Lake, strummed on an odd little native harp; and one of them might improvise a song. It was usually a very simple song; perhaps about something Kermit or I had done during the day, and of how we lived far away in an unknown land across vast oceans but had come to Africa with wonderful rifles to kill lions and elephants. Once the song was merely an expression of gratified approval of the quality of the meat of an eland I had shot during the day. Once we listened to a really humorous song describing the disapproval of the women about something their husbands had done, the shrill scolding of the women being mimicked with much effect. Some of the songs dealt with traditions and experiences which I did not understand, and which were probably far more interesting than any that I did understand.

My gun-bearers accompanied me whenever I visited the native villages of the different tribes. These tribes differed widely from one another in almost every respect. In Uganda my men stood behind me when some dignified and formally polite chief or great noble came to visit me; clothed in white, and perhaps dragged in a rickshaw or riding a mule with silver trappings, while his drummer beat on the huge native drum the distinctive clan tune which, when he walked abroad, bade all take notice just who the noble was, distinguishing

him from all the other great lords, each of whom also had his own especial tune. My men strode at my back when I approached the rest-houses that were made ready for me, as we walked from one to the other of the two Nyanzas; palm-thatched rest-houses before which the musicians of the local chiefs received me with drum-beat and the hollow booming of bamboos and rattling of gourds and the clashing of metal on metal and the twanging of instruments of many strings. They accompanied me to the rings of square huts, plastered with cow-dung, where the Masai herdsmen dwelt, guarding their cattle, goats, and wire-haired sheep; and to the nomad camps of the camel-owning Samburu, on thorn-covered flats from which we looked southward toward the mighty equatorial snow peak of Kenia. They stood with me to gaze at the midnight dances of the Kikuyu. They followed me among the villages of beehive huts in the lands of the naked savages along the upper Nile.

Ali always, no matter how untoward the surroundings, had things ready and comfortable for me at night when I came in. My gun-bearers trudged behind me all day long over the plains where the heat haze danced, or through the marshes, or in the twilight of the tropic forests. After dark they always guided me back to camp if there were any landmarks; but, curiously enough, if we had to steer by the stars, I had to do the guiding. They were always alert for game. They were fine trackers. They never complained. They were always at my elbows when we had to deal with some dangerous beast. It is small wonder I became attached to them. All of Kermit's and my personal attendants went with us to Cairo, whence we shipped them back to Zanzibar. They earnestly besought us

to take them to America. Cairo, of course, both enchanted and cowed them. What they most enjoyed while there was when Kermit took them all out in taxis to the zoo. They were children of the wilderness; their brains were in a whirl because of the big city; it made them feel at home to see the wild things they knew, and it interested them greatly to see the other wild things which were so different from what they knew.

In the old days, on the great plains and in the Rockies, I went out occasionally with Indians or half-breeds; Kermit went after mountain-sheep in the desert with a couple of Mexican packers; and Archie, Quentin, and I, while in Arizona, travelled on one occasion with a Mexican wagon-driver and a Navajo cook (both good men), and once or twice for a day or two at a time with Navajos or Utes to act as guides or horse-herders. On a hunting trip after white goat and deer in the Canadian Rockies, Archie went with a guide who turned out to be from Arizona, and who almost fell on Archie's neck with joy at meeting a compatriot from the Southwest. He was the son of a Texas ranger and a Cherokee mother, was one of a family of twenty-four children—all native American families are not dying out, thank heaven!—and was a first-class rifle-shot and hunter.

The Indians with whom I hunted were hardy, quick to see game, and good at approaching it, but were not good shots, and as trackers and readers of sign did not compare with the 'Ndorobo of the East African forests. I always became good friends with them, and when they became assured that I was sympathetic and would not laugh at them they finally grew to talk freely to me, and tell me stories and legends of goblins and

ghost-beasts and of the ancient days when animals talked like men. Most of what they said I could not understand, for I did not speak their tongues; and they talked without restraint only when I sat quiet and did not interrupt them. Occasionally one who spoke English, or a half-breed, and in one case a French-Canadian who had lived long with them, translated the stories to me. They were fairy-tales and folk-tales—I do not know the proper terminology. Where they dealt with the action of either men or gods they were as free from moral implication as if they came out of the Book of Judges; and throughout there was a certain inconsequence, an apparent absence of motive in what was done, and an equal absence of any feeling for the need of explanation. They were people still in the hunting stage, to whom hunting lore meant much, and many of the tales were of supernatural beasts. On the actions of these unearthly creatures might depend the success of the chase of their earthly relatives; or it might be necessary to placate them to avoid evil; or their deeds might be either beneficent or menacing without reference to what men did, whether in praise or prayer. Such beings of the other world were the spirit-bear of the Navajos; and the ghost-wolf of the Pawnees, to whom one of my troopers before Santiago, an educated, full-blood Pawnee, once suddenly alluded; and the spirit-buffaloes of whom the Sioux and the Mandans told endless stories, who came up from somewhere underground in the far north, who at night played games like those of human warriors in the daytime, who were malicious and might steal men and women, but who might also bring to the Indians the vast herds whose presence meant plenty and whose absence starvation. Almost everywhere the coyote ap-

peared as a sharp, tricky hero, in adventures having to do with beasts and men and magic things. He played the part of Br' Rabbit in "Uncle Remus."

Now and then a ghost-tale would have in it an element of horror. The northern Indians dwell in or on the borders of the vast and melancholy boreal forests, where the winter-time always brings with it the threat of famine, where any accident to the solitary wanderer may mean his death, and may mean also that his body will never be found. In the awful loneliness of that forest there are stretches as wide as many a kingdom of Europe to which for decades at a time no man ever goes. In the summer there is sunlit life in the forest; flowers bloom, birds sing, and the wind sighs through the budding branches. In the winter there is iron desolation; the bitter blasts sweep from the north, the driven ice-dust sears the face, the snow lies far above a tall man's height, in their icy beds the rivers lie fixed like shining steel. It is a sombre land, where death ever lurks behind the traveller. To the Indian its recesses are haunted by dread beings malevolent to man. Around the camp-fires, when the frosts of fall were heavy, I have heard the Indians talk of the oncoming winter and of things seen at twilight and sensed after nightfall by the trapper or belated wayfarer when the cold that gripped the body began also to grip the heart. They told of the windigoes which leaped and flew through the frozen air, and left huge footprints on the snow, and drove to madness and death men by lonely camp-fires. They told of the snow-walkers; how once a moose-hunter, on webbed snow-shoes, bound campward in the late afternoon saw a dim figure walking afar off on the crust of the snow parallel to him among the tree trunks; how as the afternoon waned the

figure came gradually nearer, until he saw that it was shrouded in some garment which wrapped even its head; how in the gray dusk that followed the sunset it came always closer, until he could see that what should have been its face was like the snout of a wolf, and that through a crack left bare by the shroud its eyes burned evil, baleful; how his heart was palsied with the awful terror of the unknown, of the dead that was not dead; and how suddenly he came on two other men, and the thing that had dogged him turned and vanished, and they could find no footprints on the snow.

More often the story would be nothing but a story, perhaps about birds or beasts. Once I heard a Kootenai tell such a story; but he said he had heard it very far north, and that it was not a Kootenai story. It explained why the loon has small wings and why the partridges in the north turn white in winter.

It happened very long ago. In those days there was no winter and the loon had ordinary wings and flew around like a raven. One midday the partridges were having tea on a sandpoint in a lake where there were small willows and blueberry-bushes. The loon wished to take tea with them, but they crowed and chuckled and they would not let him. So he began to call in a very loud voice a long call, almost like the baying of a wolf; you can hear it now on the lakes. He called and he called, longer and louder. He was calling the spirit who dwells in the north, so far that no man has ever known where it is. The spirit was asleep. But the loon's medicine was very strong and he called until the spirit woke up. The spirit sent the North Wind down—he *was* the North Wind—and the snow came, and summer passed away. The partridges no longer crowed and chuckled. Some of them flew

away south. The others turned white; you can see them now very far north, but in the south only on the mountains. Then the loon began to laugh, for he was very glad and proud. He laughed louder and louder; you can hear him now on the lakes. But the spirit was very angry because the loon had called him. He began to blow on the lake and he began to blow on the loon. The lake began to freeze and the loon began to dive, longer and longer. But his wings began to grow smaller. So with great difficulty, before his wings were too small, he rose and his wings beat very rapidly and he flew away south. That is why winter came and why the loon dives so well and does not fly if he can help it.

In the cane-brakes on both sides of the lower Mississippi I have hunted bear in company with the hard-riding, straight-shooting planters of the country lying behind the levees—and a gamer, more open-handedly hospitable set of men can nowhere be found. What would, abroad, be called the hunt servants were all negroes from the Black Belt, in which we were doing our hunting. These negroes of the Black Belt have never had the opportunity to develop beyond a low cultural stage. Most of those with us were kindly, hard-working men, expert in their profession. One, who handled the hounds of two Mississippi planters, was a man in many respects of really high and fine character; although in certain other respects his moral standards were too nearly those of some of the Old Testament patriarchs to be quite suitable for the present century. These black hunters possessed an extensive and on the whole accurate knowledge of the habits of the wild creatures, and yet mingled with this knowledge was a mass of firmly held nonsense

about hoop-snakes, snakes with poisonous stings in their tails, and the like. Most, although not all, of them were very superstitious and easily frightened if alone at night. Their ghost-stories were sometimes to me quite senseless; I did not know enough of the workings of their minds to understand what they meant. Those stories that were understandable usually had in them something of the grotesque and the inadequate. By daylight the black hunters would themselves laugh at their own fears; and even at night, when fully believing what they were telling, they would seriously insert details that struck us as too comic for grave acceptance. The story that most insistently lingers in my mind will explain my meaning.

Back in the swamp among cypress ponds was an abandoned plantation which had the reputation of being haunted. The "big house," the planter's house, had been dismantled but was still standing in fair condition. In the neighborhood there was a powerful negro scapegrace much given to boasting that he feared no ghost; and the local judge finally offered him five dollars if he would go alone after nightfall to the house in question and stay there until sunrise. The negro accepted with the stipulation that he was to be allowed to light a lamp that had been left in the house. The story-teller, who was as black as a shoe and a good man in the swamp after bear, told the tale as follows. I cannot pretend, however, to give his exact expressions.

"Jake started after sunset. The moon was a little more than half full, and it was a sure-enough lonely walk through the cypress woods along the abandoned, overgrown road. The branches kept waving and the moonlight flickered on the ground, and Jake couldn't

see anything clearly and yet could see a good deal, and strange noises came from the swamp on both sides. He was glad to get to the clearing, but it was overgrown, too. The house shone white in the moonlight, but the staring, open windows were black, and all inside was coal-black beyond the moonlight, and he didn't know whether it was empty or whether he most wished it was or wasn't empty. But he went inside and lit the lamp and put it on a table and sat down beside it. Nothing happened for a long time except that he kept hearing queer things in the swamp and sometimes something went across the clearing. At last a clock struck twelve, *but he knew there wasn't any clock in the house.* Just as soon as it had finished striking, a monstrous big black cat walked into the room and jumped on the table and wropped his tail three times round the lamp-chimney and said: 'Nigger, you and I is the onliest things in this house!' And Jake said, 'Mr. Black Cat, in one second *you'll* be the onliest thing in this house,' and he went through the window. He run hard down the road, and pretty soon there was a crashing in the underbrush and a big buck, with horns on him like a rocking-chair, came up alongside and said, 'Well, nigger, you must be losing your wind,' and he answered mighty polite, 'Mr. Buck, I ain't even begun to catch my wind,' and he sure left that buck behind. And he ran and he ran until he did lose his wind, and he sat down on a log. And there was a patter of footsteps behind and somebody came up the road and sat down on the log too. It was a white man, and he carried his head in his hand. The head spoke, 'Well, nigger, you surely can run!' and Jake he answered, 'Mr. White Man, you ain't never *seen* me run,' and then he *did* run. And he came to the judge's and

he beat on the door and called out: 'Judge, I'se come back; and, Judge, I don't *want* that five dollars!' "

The planter in connection with whose hounds the negro worked told me that this was a ghost-story that for a year had been told everywhere among the colored folk, but about all kinds of houses and people, and that the narrator didn't really believe it; but that, nevertheless, he believed enough of it to be afraid of empty houses after dark, and moreover that he had been frightened into leaving a swamp planter's pigs entirely alone by the planter's playing ghost and calling out to him at nightfall as he, the negro, was travelling a lonely road with possible innocence of motive.

Strongly contrasted with such more than half-comic or grotesque ghost-stories was one told me once, not by a hunting companion but by a polished and cultivated Tahitian gentleman, a guest of Henry Adams in Washington. His creed was the creed of his present surroundings; but back of the beyond in his mind lurked old tales, and old faiths glowed with a moment's flame at certain hours under certain conditions. One evening some of those present were talking of inexplicable things that had happened on the shifting borders between life and death, between the known and the unknown; and of vampires and werewolves and the ghosts of things long gone. Suddenly the Tahitian told of an experience of his mother when she was an imperious queen in the far-off Polynesian island. She had directed her people to build a bridge across the mouth of a stream. After dark something came out of the water and killed one of the men, and the others returned to her, saying that the spirit which dwelt in the stream was evil and would kill all of them if they persevered in their work. She answered that

her own family spirit, the familiar or ghost of the family, was very strong and would protect her people if she were present. Next day, accordingly, she went down in person to superintend the building of the bridge. She took with her two little tame pigs—pet pigs. All went well until evening came. Then suddenly a chill gust of wind blew from the river mouth, and in a moment the workmen fled, screaming that the spirit of the water was upon them. Almost immediately afterward there was a hubbub of a totally different kind; and after listening a moment the queen spoke, telling that her spirit had arrived, had overcome the other spirit, and was chasing him. In another moment one of her girls called out that the little pigs were dead. The queen put out her hand and touched them; they were quite cold. The defeated spirit was hiding in them! But as she felt them they began to grow warm and come to life. Her familiar had followed the evil ghost into his hiding-place in the pigs, had chased him out, and slew him as he fled to the water. There was no further interruption to the building of the bridge.

The touch about the defeated spirit hiding in the pet pigs, which thereupon grew cold, and being chased out by his antagonist was thoroughly Polynesian. It was most interesting to see the cultivated man of the world suddenly go back to superstitions that marked the childhood of the race; and then he told tales of the shark-god, and of many other gods, and of devils and magicians.

However, there is no lack of similar beliefs among our own people. Long ago I knew an old market gunner of eastern Long Island who shot ducks and bay-birds for a living. There was a deserted farmhouse on

the edge of the marsh, handy to the shooting-grounds, which he would not enter. He insisted that once he had gone there on a gray, bitter November afternoon to escape the rain which was driving in sheets. He lit a fire in the kitchen and started to dry his soaked clothes. Suddenly, out of the storm, somebody fumbled at the latch of the door. It opened and a little old woman in gray entered. She did not look at him, and yet a chill seemed to fall on him. Nevertheless, he rose and followed her as she went out into the hall. She went up the steep, narrow stairway. He went after her. She went up the still steeper little flight that went to the garret. But when he followed, there was no one there. He came downstairs, put on his clothes, took up his heavy fowling-gun, and just as evening fell he started for the mainland along a road which at one point became a causeway. When he reached the causeway the light was dim; but a figure walked alongside the road on the reeds, not bending the tops; and it was a man with his throat cut from ear to ear.

However, to tell of the crooked beliefs of the men of our own race, who dwell beside the great waters or journey across the world's waste spaces, is aside from what I have to say of the wild hunting companions whose world was peopled by ghosts as real to their minds as the men and beasts with whom they were brought in touch during their daily lives.

VIII

PRIMEVAL MAN; AND THE HORSE, THE LION, AND THE ELEPHANT

To say that progress goes on and has gone on at unequal speed in different continents, so far as human society is concerned, is so self-evident as to be trite. Yet, after all, we hardly visualize even this fact to ourselves; and we laymen, at least, often either disregard or else frankly forget the further fact that this statement is equally true as regards the prehistory of mankind and as regards the paleontological history of the great beasts with which he has been associated on the different continents during the last two or three hundred thousand years. In history, a given century may on one continent mean what on another continent was meant by a century that came a thousand years before or a thousand years later. In prehistory and paleontology there is the same geographical difference as regards the rapidity of development in time.

The Soudan under the Mahdi at the end of the nineteenth century was in religious, industrial, and social life, in fact in everything except mere time, part of the evil Mohammedan world of the seventh century. It had no relation to the contemporary body politic of humanity except that of being a plague-spot. The Tasmanians, Bushmen, and Esquimaux of the eighteenth century had nothing in common with the Europeans of their day. Their kinship, physical and cultural, was with certain races of Palæolithic Europeans and Asiatics fifty or a hundred thousand years back.

In just the same way the fierce wild life of parts of

Africa to-day has nothing in common with what we now see in Europe and the Americas. Yet in its general aspect, and in many of its most striking details, it reproduces the life that once was, in Europe and in both the Americas, in what paleontologists call the Pleistocene age. By Pleistocene is meant that period —of incalculable length as we speak of historic time, but a mere moment if we speak of geologic time— which witnessed in Europe and Asia the slow change of the brute-like and but partly human predecessors of man into beings who were culturally on a level with the lower forms of the savages that still exist, and some of whom were physically, as far as we can see, abreast of the more advanced races of to-day.

Surely, this phase in the vast epic of life development on this planet offers a fascinating study. The history of man himself is by far the most absorbing of all histories, and it cannot be understood without some knowledge of his prehistory. Moreover, the history of the rest of the animal world also yields a drama of intense and vivid interest to all scholars gifted with imagination. The two histories—the prehistory of humanity and the history of the culminating phase of non-human mammalian life—were interwoven during the dim ages when man was slowly groping upward from the bestial to the half-divine.

It was my good fortune throughout one year of my life to roam, rifle in hand, over the empty, sunlit African wastes, and at night to camp by palm and thorn tree on the banks of the African rivers. Day after day I watched the thronging herds of wild creatures and the sly, furtive human life of the wilderness. Often and often, as I so watched, my thoughts went back through measureless time to the ages when the

western lands where my people now dwell, and the northern lands of the eastern world where their remote forefathers once dwelt, were filled with just such a wild life. In those days these far-back ancestors of ours led the same lives of suspicion and vigilant cunning among the beasts of the forest and plain that are now led by the wildest African savages. In that immemorial past the beasts conditioned the lives of men, as they conditioned the lives of one another; for the chief factors in man's existence were then the living things upon which he preyed and the fearsome creatures which sometimes made prey of him. Ages were to pass before his mastery grew to such a point that the fanged things he once had feared, and the hoofed things success in the chase of which had once meant to him life or death, became negligible factors in his existence.

Some of the naked or half skin-clad savages whom I met and with whom I hunted were still leading precisely the life of these ages-dead forebears of ours. More than once I spent days in heavy forests at the foot of equatorial mountains in company with small parties of 'Ndorobo hunters. They were men of the deep woods, as stealthy and wary as any of the woodland creatures. In each case they knew and trusted my companion—who was in one instance a settler, a famous lion-hunter, and in the other a noted professional elephant-hunter. Yet even so their trust did not extend to letting a stranger like himself see their women and children, who had retreated into some forest fastness from which we were kept aloof. The men wore each a small fur cape over the shoulders. Otherwise they were absolutely naked. Each carried a pouch and a spear. The spear head was of iron, obtained from some of the settled tribes. Except this iron spear

head, not one of their few belongings differed from what it doubtless was long prior to the age of metals. They carried bows, strung with zebra gut, and arrows of which the wooden tips were poisoned. In one place Kermit found where a party of them had dwelt in a cave, evidently for many weeks; there were bones and scraps of skin without and within; and inside were beds of grass, and fire-sticks, and a walled-off enclosure of branches in which their dogs had been penned. Elsewhere we came on one or two camping-places with rude brush shelters. Each little party consisted of a family, or perhaps temporarily of two or three families. They did not cultivate the earth; they owned a few dogs; and they lived on honey and game. They killed monkeys and hyraxes, occasionally forest hog and bongo—a beautifully striped forest antelope as big as a Jersey cow—and now and then elephant, rhino, and buffalo, and, on the open plains at the edge of the forest, zebra. The zebra was a favorite food; but they could only get at it when it left the open plains and came among the bushes or to drink at the river. Two of these wild hunters showed me the bones of an elephant they had killed in a pit a long time previously; and the head man of those we had with us on another trip bore the scars of frightful wounds inflicted by an angered buffalo. Hyenas at times haunted the neighborhood, and after nightfall might attempt to carry off a child or even a sleeping man. Very rarely the hunters killed a leopard, and sometimes a leopard pounced on one of them. The lion they feared greatly, but it did not enter the woods, and they were in danger from it only if they ventured on the plain. The head man above mentioned told us that once, when desperate with hunger, his little tribe,

or family group, had found a buffalo killed by a lion, and had attacked and slain the lion, and then feasted on both it and the buffalo. But on another occasion a lion had turned the tables and killed two of their number. The father of one of my guides had been killed by baboons; he had attacked a young one with a club, and the old males tore him to pieces with their huge dog teeth. Death to the head of a family in encounter with an elephant or rhino might mean literal starvation to the weaker members. They were able to exist at all only because they had developed their senses and powers to a degree that placed them level with the creatures they dreaded or preyed upon. They climbed the huge trees almost as well as the big black-and-white monkey. I had with me gun-bearers from the hunting tribes of the plains, men accustomed to the chase, but brought up in villages where there was tillage and where goats and cattle were raised. These gun-bearers of mine were good trackers and at home in the ordinary wilderness. But compared to these true wild men of the forest they might almost as well have been town-bred. The 'Ndorobo trackers would take me straight to some particular tree or spot of ground, through miles of dense, steaming woodland every rood of which looked like every other, returning with unerring precision to a goal which my gun-bearers would have been as helpless to find again as I was myself; and they interpreted trails and signs and foot-print-scrapes which we either hardly saw or else misread.

Doubtless the ancestors, or some of the ancestors, of these men had lived in the land, just as they themselves now did, for untold generations before the soil-tillers and cattle-owners came into it. They had shrunk from the advent of the latter, and as a rule

were found only in isolated tracts which were useless for tillage or pasturage, the dense forest forming their habitual dwelling-place and retreat of safety. From the best hunting-grounds, those where the great game teemed, they had been driven; yet these hunting-grounds were often untenanted by human beings for much of the year, being visited only at certain seasons by the cattle-owning nomads.

Often these hunting-grounds offered sights of wonder and enchantment. Day after day I rode across them without seeing, from dawn to sundown, a human being save the faithful black followers, hawk-eyed and steel-thewed, who trudged behind me. Sometimes the plains were seas of wind-rippled grass. Sometimes they were dotted with clumps of low thorn-trees or broken by barren, boldly outlined hills. Our camp might be pitched by a muddy pool, with only stunted thorns near by; or on the edge of a shrunken river, under the dense shade of some great, brilliantly green fig-tree; or in a grove of huge, flat-topped acacias with yellow trunks and foliage like the most delicate lace; or where the long fronds of palms moved with a ceaseless, dry rustle in the evening breeze. At the drinking-holes, in pond or river, as the afternoon waned, or occasionally after nightfall when the moon was bright, I sometimes lay to see the game filing down to drink.

On these rides, I continually passed through, and while lying in ambush I often saw, a wealth of wild life, in numbers and variety such as the western world and the cold-temperate regions of the Old World have not seen for many, many thousands of years. How many kinds of beasts there were! Giraffes stared at us over the tops of the stunted thorn-trees. In the dawn we saw hyenas shambling homeward after their

night's prowl. Wart-hogs as hideous as nightmares ploughed along with their fore knees on the ground as they rooted it up. Sleek oryx with horns like rapiers galloped off with even, gliding gait. Shaggy wildebeests curveted and plunged with a ferocity both ludicrous and sinister; elands as heavy as prize cattle trotted away with shaking dewlaps. Ungainly hartbeests, and topi whose skins had the sheen of satin, ran with smooth speed. The lyre-horned water-bucks had the stately port of wapiti bulls. Rhinoceros, foolish, mighty, and uncouth, stood half asleep in the bright sunlight. Buffalo sought the shade of the thorn-trees, their bodies black and their great horn-bosses glinting white. Hippos snorted and gambolled in the water. Dominant always, wherever we saw them, were the lion and the elephant; and the favorite prey of the lion was the zebra, the striped wild horse of the African wastes.

Of course these many different creatures were not all to be seen at any one time or in any one place. But again and again there were so many of them that we felt as if we were passing through a gigantic zoological garden. Often the line of our burden-bearing carriers had to be shifted from its point of march, to avoid a rhinoceros which stared at us with dull and truculent curiosity; while the zebra herds filed off with barking cries across the sunlit plain, and delicate gazelles, dainty as wood-sprites, fled like shadows, and hartbeests gazed toward us with long, homely faces; or we stopped to watch a herd of elephants, cows and calves, browsing among the thorns, their curling trunks raised now and then to test the wind, or perhaps one big ear lifted and then slapped back against the body.

One day at noon, in the Sotik country of East Africa,

we stopped to skin a hyena which I had shot for the Smithsonian. As we skinned it the game of the neighborhood gathered to look on. The spectators included wildebeest, hartbeest, gazelle, topi, a zebra, and a rhinoceros—the hook-lipped kind. Late that afternoon I shot a lioness; the successive reports of the rifle and the grunting roars of the lioness put to flight a mixed herd of zebra and hartbeest which had hitherto been unconcernedly grazing not far off to one side of the scene of action.

On another day as I journeyed along the valley of the Guaso Nyero—first at the head of the safari, as it travelled through the green forest of the river-bed, and then with only my gun-bearers, through the hot, waterless, sun-scorched country back from the river—I saw rhino, giraffe, buffalo, eland, oryx, water-buck, impala, big gazelle, and gerenuk or giraffe-gazelle. After camping, toward evening, I walked upstream, away from the tents, until I came to a spot where the river ran through a wild, rugged ravine. On the hither side I found the carcass—little more than the skeleton—of a zebra which had been killed by a couple of lions as it came to drink the previous night. It was evidently a favorite drinking-place, for broad game trails led down to the river at this point from both banks. As I sat and watched, a herd of zebra approached cautiously from the opposite side. There were in it representatives of two species of these gaudily marked wild horses or wild asses, the common zebra and the much bigger northern zebra with longer ears and more numerous and narrower stripes. The herd advanced, avoiding cover as much as possible, continually halting, once wheeling and galloping back, ever seeking with eye and nostril some token of the presence of their maned

and tawny foe. At last the leader walked down through a break in the bank to the river. The others crowded close behind, jostling one another as they sank their muzzles in the water. For a moment fear left them, and they satisfied their thirst, and those that were through first then stood while the rearmost drank greedily. But as soon as one of them began to move back to the shore the others became uneasy and followed, and the whole herd broke into a gallop and tore off for a couple of hundred yards. Looking at them it was easy enough to bring before one's eyes the tragedy of the preceding night; the herd nearing the water, wary, but not wary enough, the panic flight as the lion dashed among them, the struggling and the neighing screams of the victim before the great teeth found the life they sought. The herd I watched was not assailed; it cantered off; oryx and water-buck came down to drink and also cantered off. The carcass of the murdered zebra, little but bones and shreds of red sinew and scraps of skin, lay not far from me. Footprints showed where the lions had drunk after eating. As the long afternoon lights waned, a hyena, abroad earlier than usual, began to call somewhere in the distance. The lonely gorge was rather an eerie place as darkness fell, and I strode toward camp, alone, keeping a sharp lookout round about; and as I walked and watched in a present that might be dangerous, my thoughts went back through the immeasurable ages to a past that was always dangerous; to the days when our hairy and low-browed forefathers, under northern skies, fingered their stone-headed axes as they lay among the rocks in just such a ravine as that I had quitted, and gazed with mingled greed and terror as the cave-lion struck down his prey and scattered the

herds of wild horses for whose flesh they themselves hungered.

Once in East Africa I stalked a hook-lipped rhino, a big bull with good horns. I wished its skin and skeleton for the Smithsonian. When a hundred and fifty yards off I stopped for a moment by an ant-hill and looked around over the wide plain. There were in sight a couple of giraffes, some solitary old wildebeest bulls showing black against the bleached yellow grass, and herds of hartbeest, topi, big and little gazelle, and zebra. On another occasion, when with Kermit, we inspected three rhinos at close quarters, came to the conclusion that none of them would make good specimens, and backed off cautiously a couple of hundred yards to a big ant-hill. From this point, there were in sight all the kinds of game mentioned above except the giraffe and little gazelle, and in addition there were ostrich and wart-hog.

One night when we were camped on the western bank of the upper White Nile we heard a mighty chorus. Lions roared and elephants trumpeted, and in the papyrus beds, beneath the low bluff on which our tents stood, hippopotamus bellowed and blew like the exhaust-pipes of huge steam-engines. Next day I hunted the giant square-mouthed rhinoceros, killing a cow and a bull, and taking their skins and the skeleton of one for the Smithsonian. On the walk out, and but a mile or two from camp, we had passed a small herd of elephants; and on our return we found them in the same place, still resting, with many white cow-herons perched on their backs. From where I stood looking at them hartbeest, kob, water-buck, and oribi were also all in sight.

I could mention day after day such as these, when

we saw myriads of game, often of many kinds. One afternoon of heat and sunlight on the parched Kapiti plains, teeming with wild life, I followed a lion, on horseback. During the gallop he ran for several minutes almost in the middle of a mixed herd of hartbeest and zebra. When he came to bay, I walked in on him. In the background the barren hills, "like giants at a hunting lay." Bands of hartbeests and of showy zebras, joined by grotesquely capering wildebeests and by lovely, long-horned gazelles, stood round in a wide, irregular ring, to see their two foes fight to the death. Another day, at burning noon, in a waste of sparsely scattered, withered thorn-trees, west of Redjaf on the upper Nile, I killed a magnificent giant eland bull; and during the hunt I saw elephant, giraffe, buffalo, straw-colored Nile hartbeest, and roan antelope as big as horses, with shining coats which melted in ghostly fashion into the shimmering heat haze of the dry landscape.

In short, for months my companions and I travelled and hunted in the Pleistocene. Man and beasts alike were of types our own world knew only in an incalculably remote past. My gun-bearers were really men such as those of later Paleolithic times. Now and then I spent days with hunters whose lives were led under conditions that the people of my race had not faced for ages; probably not since before, certainly not since immediately after, the close of the last glacial epoch. The number and variety of the great game, the terror inspired by some of the beasts of prey, the bulk and majesty of some of the beasts of the chase, were such as are unknown in the rest of the modern world; and nothing like them has been seen in the western and northern world since the Pleistocene.

Many of these great and beautiful beasts were of

kinds which either have developed in Africa itself and have never wandered to the other continents, or else had disappeared from these other continents before man appeared upon the earth. But three of the most characteristic of these beasts, the lion, the elephant, and the horse, were spread over almost the whole of this planet at the time when man as man had fairly begun his hunting. These three beasts then abounded in Europe and in Asia, in North America, and in South America. In each of these continents they were among the dominant types of a fauna as rich, varied, and impressive as only that of Africa is to-day.

When I speak of "elephant," "lion," and "horse" I am speaking of the beasts themselves, not their names in our vernacular. As regards two of these three animals, the horse and the big horse-killing cat, we have no common names to include the various species; whereas in the remaining case we have such a common name to include the two widely separate existing species, although we use different names to designate two well-known fossil species. We speak of both the Indian and the African proboscidians as elephants, although we style "mammoth" the recently extinct hairy elephant of the north, which was more closely related to the Asiatic elephant than the latter is to its African cousin, and although we use the word "mastodon" to denote a more primitive type of elephant also recently extinct in America. We have no such common term either for the various big cats or for the various horses. Yet the African and Asiatic elephants are far more widely separated from one another than the lion is from the tiger, or even from the jaguar. They are far more widely separated than horses, asses, and zebras are from one another. As regards both the

horses and the big cats which have always preyed so largely on horses, the differences are almost exclusively in color and in features of purely external anatomy. From the skull and skeleton it is not possible to determine with certainty the lion from the tiger, and both come very close to the big spotted cats; while the skulls of the horse, the ass, and the common zebra are with difficulty to be discriminated except by size—although the skull of the big northernmost African zebra is totally distinct.

In consequence, when we speak of extinct horses it is often impossible to guarantee that they were not asses or zebras; and when we speak of the great extinct cats of Europe and North America as lions, we know that it is possible that in life they may have looked more like tigers. Therefore it must be understood that I use the words horse and lion as terms of convenience and in a broad sense so as to avoid circumlocution. I use them in exactly the way in which "elephant" is always used to include the two totally distinct species now living in India and Africa. By "lion" I mean any one of the big extinct cats, true cats, which in their cranial and skeletal characters are almost or quite identical with living lions and tigers and closely related to living jaguars. By "horse" I mean any existing species of horse, ass, or zebra, and any one of the numerous similar extinct species which may have belonged to any one of these three types, or have been intermediate between any two of them, or perhaps have been somewhat different from all of them. As thus used, the words horse, lion, and elephant are scientifically of nearly equivalent value.

The only region in which these three animals were not found during Pleistocene times was Australia,

which was given over wholly to a relatively insignificant and undeveloped fauna of marsupials and into which it is probable that man did not intrude until at a late period. Everywhere else, from Patagonia to the Cape of Good Hope, including regions now faunistically as utterly unlike as Peru, California, Alaska, Siberia, Asia Minor, France, and Algiers, they abounded, many different and peculiar species being found. The Pleistocene gradually became part of the Age of Man; but at first it was emphatically the Age of the Horse, the Lion, and the Elephant, and the two ages overlapped for a very long period. The lion was primitive man's most deadly foe, as to this day is the case in parts of Africa. He feared the lion, and avoided him, and warred upon him, until gradually he got a little the upper hand of him. The elephant greatly impressed the imagination of this primitive man, and it still greatly impresses it; as will be seen by any one who studies the carvings and pictures of our ancestors of the glacial and postglacial epochs, or who at the present day listens to the talk of his black gun-bearers round an African camp-fire. The horse was and is a quarry as eagerly followed by primitive man as by the lion himself. Ages elapsed before the horse and finally even "my lord the elephant" were tamed by man, as man developed something that could properly be called a culture. The savages who, when England was merely a peninsula of continental Europe, dwelt by the banks of the mighty rivers which have since shrunk into the present Rhine and Seine, looked on the mammoth and the coarse-headed wild horse of their day as furnishing the flesh their stomachs craved, precisely as the savages of the Nile and the Zambesi now look on the African elephant and the zebra.

This Age of Primitive Man, this Age of the Horse, the Lion, and the Elephant, like all other historical or geological "ages," lasted longer in some places than in others, and, instead of having sharply defined limits, merged gradually into the preceding and succeeding ages. Moreover—in exact analogy with other divisions of time, all of which, however useful, are essentially artificial—we must constantly remember that the perspective changes utterly with the point of view. All paleontological terms of time are necessarily terms chiefly of convenience, which have and express a real intrinsic value, but which cannot be sharply defined. Miocene, Pliocene, Pleistocene, and Recent are such terms. They are arbitrarily chosen bits of terminology to express successive stages of the world's growth, and therefore successive and varying faunas. They are not equivalent in time to one another; the more remote the age from our own the greater is the length of time we include therein. "Recent" denotes a short period of time compared to "Pleistocene," and "Pleistocene" a short period compared to "Pliocene." If there are on this earth intelligent beings at a time in the future as remote from our day as our day is from the Pliocene, they will certainly consider "Recent" and "Pleistocene" as one short period. All the beast faunas and all the human cultures from the eras of the chinless Heidelberg and Piltdown men to our own time will seem in that remote perspective practically contemporaneous. Similarly, when we try to grasp life as lived even in such, geologically, near-by time as any portion of the Pleistocene, we cannot be sure of the exact time-parallelism of closely related faunas in different parts of the world, nor can we, in many cases, tell whether certain species were really contemporane-

ous or whether they were successive. Of the general paleontological facts, of the general aspects of the various faunas in various parts of the world, during some roughly indicated period of geologic time, we may be reasonably sure. But when we speak with more minuteness, we speak doubtfully, and at any moment new discoveries may unsettle theories by upsetting what we have supposed to be facts.

In considering what is in this chapter set forth these conditions must be kept in mind. When I speak of what I have myself seen or of the tools, carvings, and skeletons dug from the ground by competent observers, I speak of facts; but as yet the explanations of these facts must be accepted only as hypotheses, at least in part. Just as the elephant, wild horse, and lion exist in Africa to-day and have disappeared from Europe and the two Americas thousands or tens of thousands of years ago, so it may well be that they had died out in North America ages before they had disappeared from the other end of the western hemisphere. Again, in North America, it is as yet quite impossible to be sure as to the exact succession, or contemporaneity of all of the many extinct species of horse and elephant. It is with our present knowledge equally impossible to be sure of the exact time relations between any given North American fauna and the Eurasiatic fauna most closely resembling it. Moreover, as yet we have only the vaguest idea of the duration of even modern geologic time; good observers vary as to whether a given period covers hundreds of thousands or only tens of thousands of years.

This does not impair the value of the general picture which we can make in our minds. It is not essentially different from what is the case in history. If we speak

of the Græco-Roman world from the days of Aristides to those of Marcus Aurelius, we outline a historical period which has a real unity, and of which all the parts are bound together by real ties and real resemblances. Nevertheless, there were sharp differences in the successive cultures of this period; even the two centuries which intervened, say, between Miltiades and Demetrius Poliorketes, or between Marius and Trajan, showed such differences. Dealing roughly with the period as a whole, it would not be necessary to try to draw all the distinctions and make all the qualifications that would be essential to minutely accurate treatment; such treatment would merely mar the outlines of a general sketch. The same thing is, of course, true of an outline sketch of what our present knowledge shows of man's most wide-spread beast associates, when he had begun, in forms not very different from those of the lower savages to-day, to spread over the world's surface.

Therefore it is necessary to remember that in dealing even with such a recent chapter of paleontological discovery as that concerned with early man and the great four-footed creatures that were his contemporaries, our general picture can rarely pretend to more than general accuracy. It is only in prehistoric and protohistoric Europe that the early career of "homo sapiens" and his immediate predecessors has been worked out in sufficient detail to give even the roughest idea of its successive stages, and of the varying groups of great beasts with which at the different stages man was associated. This is because the record has been better preserved, and more closely studied in Europe than elsewhere; for it seems fairly certain that it is in Eurasia, in the palæarctic realm, that there took place the development of the more or less ape-like predecessors

of man and then of man himself. It is in Eurasia that all of the remains of man's immediate predecessors have been found—from the Javan pithecanthropus which can only doubtfully be called human, to the Piltdown and Heidelberg men, who were undoubtedly human, but who were so much closer than any existing savage to the beasts that (unless our present imperfect knowledge proves erroneous) they can hardly be deemed specifically identical with modern homo sapiens. Even the more modern Neanderthal men are probably not ancestral to our own stock. It is in Europe, following on these predecessors of existing man, that we find the skeletons, the weapons and tools, and the carvings of existing man in his earliest stages; and mingled with his remains those of the strange and mighty beasts which dwelt beside him in the land. Probably these European forefathers of existing man came from a stock which had previously gone through its early human and prehuman stages in Asia. But we only know what happened in Europe. There was a slow, halting, and interrupted but on the whole steady development in physical type—sometimes the type itself gradually changing, while sometimes it was displaced by a wholly different type of wholly different blood. Roughly parallel with this was a corresponding development in cultural type. Probably from the earliest times and certainly in late times, development or change in physical type was often wholly unrelated to development or change in culture. Sometimes the cultural change was an autochthonous development. Sometimes it was due to a more or less complete change in blood, owing to the immigration of a strong alien type of humanity. Sometimes it was due to the adoption of an alien culture.

Many good observers nowadays, judging from the facts at present accessible, are inclined to think that the American Indian stocks were the first human stocks that peopled the western hemisphere, that they are by blood nearest of kin to certain race-elements still existing in northeastern Asia—representing the only inhabitants of northeastern Asia when man first penetrated from there to northwestern America—and that more remotely they may be kin to certain late Paleolithic men of Europe. But much of the American Indian culture was essentially a Neolithic culture, seemingly from the beginning. In places—Peru, Mayaland, the Mexican plateau—it at times developed into a civilization equally extraordinary for its achievements and for its shortcomings and evanescence; but it never developed a metal epoch corresponding to, say, the bronze age of the Mediterranean, and although the small camel, the llama, was tamed in South America, in North America, the ox, sheep, white goat, and reindeer were never made servants of man, as befell so many corresponding beasts of Eurasia.

In this last respect the American Indians stayed almost on the level of the African tribes, whose native civilization was otherwise far less advanced. The African buffalo is as readily tamed as its Asiatic brother; the zebra was as susceptible of taming as the early wild horse and ass; the eland is probably of all big ruminants the one that most readily lends itself to domestication. But none of them was tamed until tribes owning animals which had been tamed for ages appeared in Africa; and then the already-tamed animals were accepted in their stead. The asses, cattle, sheep, and goats of Asia are now the domestic animals of the negroes and of the whites in Africa, merely be-

cause it is easier, more profitable, and more convenient to deal with animals already accustomed for ages to the yoke of domestic servitude than to again go through the labor incident to changing a wild into a tame beast.

It is probable that during the immense stretch of time which in Europe covered the growth of the various successive Paleolithic, and finally Neolithic, cultures—the "old-stone" ages during which man used stone implements which he merely chipped and flaked, and the "new-stone" age in which he ground and polished them—there happened time and again what has happened in the history and prehistory of man in Africa and North America. One of the incidents in this parallelism is the way in which the inhabitants accepted animals already trained and brought from elsewhere rather than attempt to train the similar beasts of their own forests. Doubtless the reason why the European bison is not a domestic animal is exactly the same as the reason why the American bison and African buffalo are not domestic animals. The northern European hunting savages were displaced or subjugated by, or received a higher culture from, tribes bringing from Asia or from the Mediterranean lands the cattle they had already tamed. The same things happened, in Africa south of the Sahara while it was still shrouded from civilized vision, and in America since the coming of the European.

These hunting savages existed for ages, for hundreds of thousands of years, in Europe. During this period of time—immense by historic standards, yet geologically a mere moment—many different human types succeeded one another. The climate swung to and from glacial to subtropical; fauna succeeded fauna. One group of species of big beasts succeeded another

as the climate and plant life changed; and then itself gave place to a third; and perhaps once more resumed its ancient place as the physical conditions again became what they once had been. At certain periods the musk-ox, the reindeer, the woolly rhinoceros, and the hairy mammoth, together with huge cave-bears, were found; at other periods southern forms of elephant and rhinoceros, and such tropical creatures as the hippopotamus, replaced the beasts of the snow-land. Horses of different species were sometimes present in incredible numbers. There were species of wild cattle, including the European bison, and the urus or aurochs—spoken of by Cæsar, and kin to, and doubtless partly ancestral to, the tame ox. The cave-lion, perhaps indistinguishable from the modern African lion, was the most formidable beast of prey. I say "perhaps" indistinguishable, for we cannot be quite certain. Some of the races of cave-dwelling men were good artists, and carved spirited figures of mammoth, rhinoceros, bison, horse, reindeer, and bear on ivory, or on the walls of caves. The big lion-like cats appear only rarely in these pictures.

In most cases the arctic and warm-temperate or near-tropical animals supplanted one another only incompletely as the waves of life advanced and receded when the climate changed. This seems a rather puzzling conjunction. The explanation is twofold. When the climate changes, when it becomes warmer, for instance, northern creatures that once were at home in the lowlands draw off into the neighboring highlands, leaving their old haunts to newcomers from the south, while nevertheless the two faunas may be only a few miles apart; just as in Montana and Alberta moose and caribou in certain places were found side by side

with the prongbuck. Moreover, some species possess an adaptability which their close kin do not, and can thrive under widely different temperature conditions. A century ago the hippopotamus was found in the temperate Cape Colony, close to mountain ranges climatically fit for the typical beasts of north-temperate Eurasia. In Arizona at the present day mammals and birds of the Canadian fauna live on the mountain tops around the bases of which flourish animals characteristic of the tropical Mexican plateau; the former having been left stranded on high mountain islands when, with the retreat of the glaciers, the climate of the United States grew warmer and the tide of southern life-forms swept northward over the lowlands. Under such conditions the same river deposits might show a combination of utterly different faunas. Moreover, some modern animals are found from the arctics to the tropics. The American lynx extends, in closely connected forms, from the torrid deserts of Mexico to arctic Alaska; so does the mountain-sheep. The tiger flourishes in the steaming Malay forests and in snowy Manchuria. I have found the cougar breeding in the frozen, bitter midwinter among the high Rockies, in a country where snow covered the ground for six months, and where the caribou would be entirely at home; and again in Brazil under the equator, in the atmosphere of a hothouse. There were periods, during the ages before history dawned, but when man had long dwelt in Europe, in which herds of reindeer may have roamed the French and English uplands within sight of rivers wherein the hippopotamus dwelt as comfortably as he recently did at the Cape of Good Hope.

Some of the more recent of these European hunting savages—those who were perhaps in part our own fore-

fathers, or who perhaps were of substantially the same ethnic type as the men of the older race strains in northeastern Asia, and even possibly of the American Indians—and many of their more remote predecessors were contemporaries of the lion, the horse, and the elephant. Different species of horse and elephant succeeded one another. The earlier ones were contemporaries of the hippopotamus and of not only the lion but the sabretooth. When the hairy elephant, the mammoth, was present, the fauna also often included the cave-lion, cave-hyena, cave-bear, wolf, boar, woolly rhinoceros, many species of deer (including the moose and that huge fallow deer, the Irish elk), horses, and the bison and the aurochs. The mammoth and woolly rhinoceros died out so recently that their carcasses are discovered preserved in the Siberian ice, and the undigested food in their stomachs shows that they ate northern plants of the kinds now common, and the twigs of the conifers and other trees which still flourish in the boreal realm of both hemispheres.

The lion was doubtless the most dreaded foe of the ancient European, just as he is to this day of certain African tribes. The Paleolithic hunters slaughtered myriads of wild horses, just as the ebony-hued hunters of Africa now slaughter the zebra and feast on its oily flesh. The spirited carvings and sketches of the hairy mammoth by the later Paleolithic cave-dwellers show that the elephant of the cold northlands had impressed their imaginations precisely as the hairless elephant of the hot south now impresses the imaginations of the tribes that dwell under the vertical African sun. The rhinoceros and wild cattle of the pine forests played in their lives the part played in the lives of our contemporaries, the hunting tribes of Africa, by the rhi-

noceros and the buffalo—the African wild ox—which dwell among open forests of acacias and drink from palm-bordered rivers. They saw no animal like that strange creature, the African giraffe; and several kinds of deer took the place of the varied species of bovine ruminants which, in popular parlance, we group together as antelopes.

Substantially, the fauna of mighty beasts which furnished the means of livelihood and also constantly offered the menace of death to our European forefathers—or to the predecessors of our forefathers—was like that magnificent fauna which we who have travelled among the savages of present-day Africa count it one of our greatest pleasures to have seen. During the ages when the successive races of hunter-savages dwelt in Europe a similar magnificent fauna of huge and strange beasts flourished on all the continents of the globe except in Australia. In Europe it vanished in prehistoric times, when man had long dwelt in the land. In Africa south of the Sahara, and partially in spots of Asia, it has persisted to this day. In North America it died out before, or perhaps, as regards the last stragglers, immediately after, the coming of man; in South America it seems clear that it survived, at least in places, until he was well established.

The three abundant and conspicuous beasts, all three typical of the great mammalian fauna which was contemporary with the prehistoric human hunters, and all three common to all the continents on which this great mammalian fauna was found, were the lion—using the name to cover several species of huge horse-killing and man-killing cats; the elephant, including several totally different species, among them the mammoth and mastodon; and the horse, including numerous

widely different species. Together with these three universally distributed animals were many others belonging to types confined to certain of the continents. Rhinoceros were found in Europe, Asia, and Africa (they had once flourished in North America, but had died out long before man appeared on the globe). Camels were found in Asia, in South America, and especially in North America, which was their centre of abundance and the place where they had developed. Wild oxen were found in all the continents except South America; deer everywhere except in true Africa, zoogeographical Africa, Africa south of the Sahara. The pigs of the Old World were replaced by the entirely different peccaries of the New World. Sheep, goats, and goat-antelopes lived in Eurasia and North America. Most of the groups of big ruminants commonly called "antelopes" are now confined to Africa; but it appears that formerly various representatives of them reached America. The giraffe through this period was purely African; the hippopotamus has retreated to Africa, although in the period we are considering its range extended to Eurasia. In South America were many extraordinary creatures totally different from one another, including ground-sloths as big as elephants. Two or three outlying representatives of the ground-sloths had wandered into North America; but elsewhere there were no animals in any way resembling them. The horse, the lion, and the elephant were the three striking representatives of this vast and varied fauna which were common to all five continents.

The North American fauna of this type reached its height about the time—extending over many scores of thousands of years—when successive ice ages alternated with long stretches of temperate or subtropical

climate throughout the northern hemisphere. During the period when this great North American fauna flourished, hunter-savages of archaic type lived amid, and partly on, the great game of Europe. But, as far as we know, men did not come to America until after, or at the very end of, the time when these huge grass-eaters and twig-eaters, and the huge flesh-eaters which preyed on them, vanished from the earth, owing to causes which in most cases we cannot as yet even guess.

Much the most striking and interesting collection of the remains of this wonderful fauna is to be found near one of our big cities. On the outskirts of Los Angeles, in southern California, are asphalt deposits springing from petroleum beds in the shales below. The oil seeping up to the surface has formed shallow, spread-out pools and, occasionally, deep pits covered with water. In part of the area these pits and pools of tar have existed for scores of thousands or hundreds of thousands of years, since far back in the Pleistocene. They then acted as very dangerous and efficient mammal traps and bird traps—and now continue so to act, for the small mammals and the birds of the neighborhood still wander into them, get caught in the sticky substance, and die, as I have myself seen. Moreover, the tar serves as a preservative of the bones of the creatures that thus perish. In consequence some of the ancient pits and pools are filled with immense masses of the well-preserved bones of the strange creatures that were smothered in them ages ago.

Nowhere else is there any such assemblage of remains giving such a nearly complete picture of the fauna of a given region at a given time. A striking peculiarity is that the skeletons of the flesh-eaters far surpass in number the skeletons of the plant-eaters. This is

something almost unique, for of course predatory animals are of necessity much less numerous than the animals on which they prey. The reversal in this case of the usual proportions between the skeletal remains of herbivorous and carnivorous beasts and birds is due to the character of the deposits. The tar round the edges of the pools or pits hardens, becomes covered with dust, and looks like solid earth; and water often stands in the tar-pits after rain, while at night the shallow pools of fresh tar look like water. Evidently the big grazing or browsing beasts now and then wandered out on the hard asphalt next the solid ground, and suddenly became mired in the soft tar beyond. Probably the pits in which water stood served as traps year after year as the thirsty herds sought drink. Then each dead or dying animal became itself a lure for all kinds of flesh-eating beasts and birds, which in their turn were entrapped in the sticky mass. In similar manner, thirty years ago on the Little Missouri, I have known a grizzly bear, a couple of timber-wolves, and several coyotes to be attracted to the carcass of a steer which had bogged down in the springtime beside an alkali pool.

Another result of the peculiar conditions under which the skeletons accumulated is that an unusually large number of very old, very young, and maimed or crippled creatures were entrapped. Doubtless animals in full vigor were more apt to work themselves free at the moment when they found they were caught in the tar; and, moreover, a wolf or sabretooth which was weakened by age or by wounds received in encounter with its rivals, or with some formidable quarry, and which therefore found its usual prey difficult to catch, would be apt to hang around places where carcasses,

or living creatures still feebly struggling, offered themselves to ravenous appetites.

The plant remains in these deposits show that the climate and vegetation were substantially those of California to-day, although in some respects indicating northern rather than southern California. There were cypress-trees of a kind still common farther north, manzanita, juniper, and oaks. Evidently the region was one of open, grassy plains varied with timber belts and groves. It has been said that to support such a fauna the vegetation must have been much more luxuriant than in this region at present. This is probably an error. The great game regions of Africa are those of scanty vegetation. Thick forest holds far less big animal life. Crossing the sunny Athi or Kapiti plains of East Africa, where the few trees are thorny, stunted acacias and the low grass is brown and brittle under the drought, the herds of zebra, hartbeest, wildebeest, and gazelle are a perpetual delight and wonder; and elephant, rhinoceros, and buffalo abounded on them in the days before the white man came. On the Guaso Nyero of the north, and in the Sotik, the country was even drier at the time of my visit, and the character of the vegetation showed how light the normal rainfall was. The land was open, grassy plain, or was thinly covered with thorn scrub, with here and there acacia-groves and narrow belts of thicker timber growth along the watercourses, and in the Sotik gnarled gray olives. Yet the game swarmed. We watched the teeming masses come down to drink at the shrunken rivers or at the dwindling ponds beside which our tents were pitched. As the line of the safari walked forward under the brazen sky, while we white men rode at the head with our rifles, the herds of strange and beautiful

wild creatures watched us, with ears pricked forward, or stood heedless in the thin shade of the trees, their tails switching ceaselessly at the biting flies. In wealth of numbers, in rich variety and grandeur of species, the magnificent fauna we then saw was not substantially inferior to that which an age before dwelt on the California plains.

This Pleistocene California fauna included many beasts which persisted in the land until our own day. There were cougars, lynxes, timber-wolves, gray foxes, coyotes, bears, pronghorn antelopes, and blacktail or whitetail deer nearly, or quite, identical with the modern forms. They were the same animals which I and my fellow ranchmen hunted when, in the early eighties of the last century, our branded cattle were first driven to the Little Missouri. They swarmed on the upper Missouri and the Yellowstone when Lewis and Clark found the bison and wapiti so tame that they would hardly move out of the way, while the grizzly bears slept on the open plains and fearlessly attacked the travellers. But in the Pleistocene at the time we are considering, the day of these modern creatures had only begun. The contents of the tar-pits show that the animals named above were few in number, compared to the great beasts with which they were associated.

The giant among these Pleistocene giants of California, probably the largest mammal that ever walked the earth, was the huge imperial elephant. This mighty beast stood at least two feet higher than the colossal African elephant of to-day, which itself is bigger than the mammoth and as big as any other extinct elephant. The curved tusks of the imperial elephant reached a length of sixteen feet. A herd of such mighty beasts

must have been an awe-inspiring sight—had there been human eyes to see it. Nor were they the only representatives of their family. A much more archaic type of elephant, the mastodon, flourished beside its gigantic cousin. The mastodon was a relatively squat creature, standing certainly four feet shorter than the imperial elephant, with comparatively small and slightly curved tusks and a flatter head. Enormous numbers of mastodons ranged over what is now the United States, and the adjacent parts of Canada and Mexico. The mastodons represented a stage farther back in the evolutionary line than the true elephants, and in the Old World they died out completely before the latter disappeared even from Europe and Siberia. But in North America, for unknown reasons, they outlasted their more highly developed kinsfolk and rivals, and there is some ground for believing that they did not completely disappear until after the arrival of man on this continent.

The elephant stock developed in the Old World, and it is probable that the true elephants were geologically recent immigrants to America, coming across the land bridge which then connected Alaska and Siberia. In California they encountered the big descendants of other big immigrants, which had reached North America by another temporary land bridge, but from another continent, South America. These were the ground-sloths, giant edentates, which reached an extraordinary development in the southern half of our hemisphere, where distant and diminutive relatives—tree-sloths, ant-eaters, armadillos—still live. The most plentiful of these California ground-sloths, the mylodon, was about the size of a rhinoceros; an unwieldy, slow-moving creature, feeding on plants, and in appearance utterly unlike anything now living.

Together with these great beasts belonging to stocks that in recent geologic time had immigrated hither from the Old World and from the southern half of the New World was another huge beast of remote native ancestry. This was a giant camel, with a neck almost like that of a giraffe. Camels—including llamas—developed in North America. Their evolutionary history certainly stretched through a period of two or three million—perhaps four or five million—years on this continent, reaching back to a little Eocene ancestor no bigger than a jack-rabbit. Yet after living and developing in the land through these untold ages, over a period inconceivably long to our apprehension, the camels completely died out on this continent of their birth, although not until they had sent branches to Asia and South America, where their descendants still survive.

Two other grass-eating beasts, of large size—although smaller than the above—were also plentiful. One, a bison, bigger, straighter-horned, and less specialized than our modern bison, represented the cattle, which were among the animals that passed to America over the Alaskan land bridge in Pleistocene time.

The other was a big, coarse-headed horse, much larger than any modern wild horse, and kin to the then existing giant horse of Texas, which was the size of a Percheron. The horses, like the camels, had gone through their developmental history on this continent, the earliest ancestor, the little four-toed "dawn horse" of the Eocene, being likewise the size of a jack-rabbit. Through millions of years, while myriads of generations followed one another, the two families developed side by side, increasing in size and seemingly in adaptation to the environment. Each stock branched into many

different species and genera. They spread into the Old World and into South America. Then, suddenly —that is, suddenly in zoologic sense—both completely died out in their ancient home, and the horses in South America also, whereas half a dozen very distinct species are still found in Asia and Africa.

All these great creatures wandered in herds to and fro across the grassy Californian plains and among the reaches of open forest. Preying upon them were certain carnivora grimmer and more terrible than any now existing. The most distinctive and seemingly the most plentiful was the sabretooth. This was a huge, squat, short-tailed, heavily built cat with upper canines which had developed to an almost walrus-like length; only, instead of being round and blunt like walrus tusks, they were sharp, with a thin, cutting edge, so that they really were entitled to be called sabres or daggers. Whether the creature was colored like a lion or like a tiger or like neither, we do not know, for it had no connection with either save its remote kinship with all the cats. The sabretooth cats, like the true cats, had gone through an immensely long period of developmental history in North America, although they did not appear here as early as the little camels and horses. Far back across the ages, at or just after the close of the Eocene—the "dawn age" of mammalian life—certain moderate-sized or small cat-like creatures existed on this continent, doubtless ancestral to the sabretooth, but so generalized in type that they display close affinities with the true cats, and even on certain points with the primitive dog creatures of the time. Age followed age—Oligocene, Miocene, Pliocene. The continents rose and sank and were connected and disconnected. Vast lakes appeared and disappeared. Moun-

tain chains wore down and other mountain chains were thrust upward. Periods of heat during which rich forests flourished north of the arctic circle, were followed by periods of cold when the glacial ice-cap crept down half-way across the present temperate zone. Slowly, slowly, while the surface of the world thus changed, and through innumerable reaches of time, the sabretooth cats and true cats developed along many different lines in both the Old World and the New. One form of sabretooth was in Europe with the bestial near-human things who were the immediate predecessors of the first low but entirely human savages. It was in the two Americas, however, that the sabretooth line culminated, immediately before its final extinction, in its largest and most formidable forms. This California sabretooth was not taller than a big cougar or leopard, but was probably as heavy as a fair-sized lion. Its skeletal build is such that it cannot have been an agile creature, apt at the pursuit of light and swift prey. By rugged strength and by the development of its terrible stabbing and cutting dagger teeth—that is, by sheer fighting ability—it was fitted for attack upon and battle with the massive herbivora then so plentiful. It must indeed have been a fearsome beast in close grapple. Doubtless with its sharp, retractile claws it hung onto the huge bodies of elephant, camel, and ground-sloth, of horse and bison, while the sabres were driven again and again into the mortal parts of the prey and slashed the flesh as they withdrew. It seems possible that the mouth was opened wide and stabbing blows delivered, almost as a rattlesnake strikes with raised fangs. Vast numbers of sabretooth skeletons have been found in the asphalt; evidently the strange, formidable creature haunted any region which held at-

traction for the various kinds of heavy game on which it preyed.

The only other carnivore as abundant as the sabretooth was a giant wolf. This was heavier than any existing wolf, with head and teeth still larger in proportion. The legs were comparatively light. Evidently, like the sabretooth, this giant wolf had become specialized as a beast of battle, fitted to attack and master the bulky browsers and grazers, but not to overtake those that were smaller and swifter. The massive jaws and teeth could smash heavy bones and tear the toughest hide; and a hungry pack of these monsters, able to assail in open fight any quarry no matter how fierce or powerful, must have spread dire havoc and dismay among all things that could not escape by flight.

There were two still larger predatory species, which were much less plentiful than either the wolf or the sabretooth. One was a short-faced cave-bear, far larger than even the huge Alaskan bear of to-day. Doubtless it took toll of the herds; but bears are omnivorous beasts, and not purely predatory in the sense that is true of those finished killers, the wolves and big cats. Unlike the wolves and cats, bears were geologically recent immigrants to America.

The other was a true cat, a mighty beast; bigger than the African lion of to-day; indeed, perhaps the biggest and most powerful lion-like or tiger-like cat that ever existed. Seemingly it was much rarer than the sabretooth; but it is possible that this seeming rarity was due to its not lurking in the neighborhood of pools and licks but travelling more freely over the wastes, being of a build fit not only for combat but for an active and wandering life. It is usually spoken of as kin to the African lion, a decidedly smaller beast. It is

possible that its real kinship lies with the tiger. The Manchurian form of the tiger is an enormous beast, and a careful comparison of the skulls and skeletons may show that it equals in size the huge western American cat of Pleistocene times. I have already spoken of the fact that in many cases it is almost impossible to distinguish the lion and tiger apart by the bones alone; and it may be that the exact affinities of these recently extinct species with living forms cannot be definitely determined. But during historic and prehistoric times the lion has been a beast of western Eurasia and of Africa. The tiger, on the contrary, is and has been a beast of eastern Asia, and apparently has been spreading westward and perhaps southward; that it was not as ancient an inhabitant of jungle-covered southern India as the elephant and leopard seems probable from the fact that it is not found in Ceylon, which island in all likelihood preserves most of the southern Indian fauna that existed prior to its separation from the mainland. Moreover, the finest form of tiger exists in cold northeastern Asia. In Pleistocene times this portion of Asia was connected by a broad land bridge with western America, where the mighty American cat then roved and preyed on the herds of huge plant-eating beasts. We know that many Asiatic beasts crossed over this land bridge—the bears, bison, mountain-sheep, moose, caribou, and wapiti, which still live both in Asia and North America, and the mammoth and cave-bears, which have died out on both continents. It is at least possible—further investigation may or may not show it to be more than possible—that the huge Pleistocene cat of western America was the collateral ancestor of the Manchurian tiger. Whether it was another immigrant from Asia or

a developed form of some big American Pliocene cat, cannot with our present knowledge be determined.

Surely the thought of this vast and teeming and utterly vanished wild life must strongly appeal to every man of knowledge and love of nature, who is gifted with the imaginative power to visualize the past and to feel the keen delight known only to those who care intensely both for thought and for action, both for the rich experience acquired by toil and adventure, and for the rich experience obtained through books recording the studies of others.

Doubtless such capacity of imaginative appreciation is of no practical help to the hunter of big game to-day, any more than the power to visualize the long-vanished past in history helps a practical politician to do his ordinary work in the present workaday world. The governor of Gibraltar or of Aden, who cares merely to do his own intensely practical work, need know nothing whatever about any history more ancient than that of the last generation. But this is not true of the traveller. It is not even true of the politician who wishes to get full enjoyment out of life without shirking its duties. He certainly must not become a mere dreamer, or believe that his dreams will help him in practical action. But joy, just for joy's sake, has its place too, and need in no way interfere with work; and, of course, this is as true of the joy of the mind as of the joy of the body. As a man steams into the Mediterranean between the African coast and the "purple, painted headlands" of Spain, it is well for him if he can bring before his vision the galleys of the Greek and Carthaginian mercantile adventurers, and of the conquering Romans; the boats of the wolf-hearted Arabs; the long "snakes" of the Norse pirates, Odin's darlings; the stately and gorgeous

war craft of Don John, the square-sailed ships of the fighting Dutch admirals, and the lofty three-deckers of Nelson, the greatest of all the masters of the sea. Aden is like a furnace between the hot sea and the hot sand; but at the sight of the old rock cisterns, carved by forgotten hands, one realizes why on that coast of barren desolation every maritime people in turn, from the mists that shroud an immemorial antiquity to our own day of fevered materialistic civilization, has seized Aden Bay—Egyptian, Sabean, Byzantine, Turk, Persian, Portuguese, Englishman; and always, a few miles distant, in the thirsty sands, the changeless desert folk have waited until pride spent itself and failed, and the new power passed, as each old power had passed, and then the merciless men of the waste once more claimed their own.

Gibraltar and Aden cannot mean to the unimaginative what they mean to the men of vision, to the men stirred by the hero tales of the past, by the dim records of half-forgotten peoples. These men may or may not do their work as well as others, but their gifts count in the joy of living. Enjoyment the same in kind comes to the man who can clothe with flesh the dry bones of bygone ages, and can see before his eyes the great beasts, hunters and hunted, the beasts so long dead, which thronged the Californian land at a time when in all its physical features it had already become essentially what it still continues to be.

The beast life of this prehistoric California must be called ancient by a standard which would adjudge the Egyptian pyramids and the Mesopotamian palace mounds and the Maya forest temples to be modern. Yet when expressed in geologic terms it was but of yesterday. When it flourished the Eurasian hunting

savages were in substantially the same stage of progress as the African hunting savages who now live surrounded by a similar fauna. On the whole, taking into account the number, variety, and size of the great beasts, the fauna which surrounded paleolithic man in Europe was inferior to that amid which dwell the black-skinned savages of equatorial Africa. Even Africa, however, although unmatched in its wealth of antelopes, cannot quite parallel, with its lion, elephant, and zebras, the lordlier elephant, the great horse, and the huge cat of the earlier Californian fauna; and the giraffe, the hyena, the rhinoceros, and the hippopotamus do not quite offset the sabretooth, the giant wolf, the mastodon, the various species of enormous ground-sloths, and the huge camel; the bison and buffalo about balance each other.

There were no human eyes to see nor human ears to hear what went on in southern California when it held an animal life as fierce and strange and formidable as mid-Africa to-day. The towering imperial elephants and the burly mastodons trumpeted their approach one to the other. The great camels, striding noiselessly on their padded feet, passed the clumsy ground-sloths on their way to water. The herds of huge horses and bison drank together in pools where the edges were trodden into mire by innumerable hoofs. All these creatures grew alertly on guard when the shadows lengthened and the long-drawn baying of the wolf pack heralded the night of slaughter and of fear; and the dusk thrilled with the ominous questing yawns of sabretooth and giant tiger, as the beasts of havoc prowled abroad from their day lairs among the manzanitas, or under cypress and live-oak.

The tar-pools caught birds as well as beasts. Most

of these birds were modern—vultures, eagles, geese, herons. But there were condor-like birds twice the size of any living condor, the biggest birds, so far as we know, that ever flew. There were also, instead of wild turkeys, great quantities of wild peacocks—at least they have been identified as peacocks or similar big, pheasant-like birds. If the identification is correct, this is an unexpected discovery and a fresh proof of how this extinct American fauna at so many points resembled that of Asia. It was natural that a collateral ancestor of the present Asiatic pheasant-like birds should dwell beside a collateral ancestor of the present Asiatic tiger.*

Moreover, the tar-pools hold human bones. These, however, are probably of much later date than the magnificent fauna above described, perhaps only a few thousand years old. They belong to a rather advanced type of man. It is probable that before man came to America at all, the earlier types had died out in Eurasia, or had been absorbed and developed, or else had been thrust southward into Africa, Tasmania, Australia, and remote forest tracts of Indo-Malaysia, where, being such backward savages, they never developed anything remotely resembling a civilization. It was probably people kin to some of the later cave-dwellers who furnished the first (and perhaps until the advent of the

* Professor J. C. Merriam, of the University of California, first studied this fauna. The excavations are now being carried on by Director Frank S. Daggett, of the Capital Museum of Los Angeles County. I have spoken above of the vast herds of game encountered over a century ago by Lewis and Clark on the upper Missouri. The journals of these two explorers form an American classic, and they have found a worthy editor in Reuben Gold Thwaites; there could not be an edition more satisfactory from every standpoint—including that of good taste. In anthropology I follow the views of Fairfield Osborne and Ales Hrdlicka; I am not competent to decide as to the points where they differ; and they would be the first to say that some of the hypotheses they advance must be accepted as provisional until our knowledge is greater.

white man the only important) immigration to America. These immigrants, the ancestors of all the tribes of Indians, spread from Alaska to Terra del Fuego. Over most of the territory in both Americas they remained at the hunting stage of savage life, although they generally supplemented their hunting by a certain amount of cultivation of the soil, and although in places they developed into advanced and very peculiar culture communities.

When these savages reached North America it is likely, from our present knowledge, that the terrible and magnificent Pleistocene fauna had vanished, although in places the last survivors of the mastodon and perhaps of one or two other forms, may still have lingered. What were the causes of this wide-spread and complete and—geologically speaking—sudden extermination of so many and so varied types of great herbivorous creatures, we cannot say. It may be we can never do more than guess at them. It is certainly an extraordinary thing that complete destruction should have suddenly fallen on all, literally all, of the species. Camels and horses, after they had dwelt on this continent for millions of years, since almost the dawn of mammalian life, developing from little beasts the size of woodchucks into the largest and most stately creatures of their kind that ever trod the earth's surface, all at once disappeared to the very last individual. Ground-sloths and elephants vanished likewise. The bigger forms of bison also died out, although one species remained. Many causes of extinction have been suggested. Perhaps all of them were more or less operative. Perhaps others of which we know nothing were operative. We cannot say.

But as regards certain of the formidable, but heavy

rather than active, beasts of prey it is possible to hazard a guess. Compared to agile destroyers like the cougar and the timber-wolf, the sabretooth and the big-headed, small-legged giant wolf were strong, heavy, rather clumsy creatures. Predatory animals of their kind were beasts of battle rather than beasts of the chase. They were fitted to overcome by downright fighting strength a big, slow, self-confident quarry, rather than to run down a swift and timid quarry by speed or creep up to a wary and timid quarry by sinuous stealth. So long as the heavy herbivora were the most numerous, these fighting carnivora were dominant over their sly, swift, slinking brethren. But when the great mass of plant-eaters grew to trust to speed and vigilance for their safety there was no longer room for preying beasts of mere prowess.

In South America it is probable that the heavy fauna died out much later than in North America and northern Eurasia; that is, it died out much later than in what zoogeographers call the holarctic realm. During most of the Tertiary period or age of mammals, the period intervening between the close of the age of great reptiles and the time when man in human form appeared on the planet, South America was an island, and its faunal history was as distinct and peculiar as that of Australia. Aside from marsupials and New World monkeys, its most characteristic animals were edentates and very queer ungulates with no resemblance to those of any other continent. Toward the close of the Tertiary, land bridges connected the two Americas and an interchange of faunas followed. The South American fauna was immensely enriched by the incoming of elephants, horses, sabretooth cats, true cats, camels, bears, tapirs, peccaries, deer, and dogs, all of

which developed along new and individual lines. A few of these species, llamas and tapirs for instance, still persist in South America although they have died out in the land from which they came. But in the end and also for unknown causes, this great fauna died out in South America likewise, leaving a continent faunistically even more impoverished than North America. The great autochthonous forms shared the extinction of the big creatures of the immigrant fauna; for under stress of competition with the newcomers, the ancient ungulates and edentates had developed giants of their own.

Recent discoveries have shown that the extinction was not complete when the ancestors of the Indians of to-day reached the southern Andes and the Argentine plains. An age previously the forefathers of these newcomers had lived in a land with the wild horse, the wild elephant, and the lion; and now, at the opposite end of the world, they had themselves reached such a land. The elephants were mastodons of peculiar type; the horses were of several kinds, some resembling modern horses, others differing from them in leg and skull formation more than any of the existing species of ass, horse, or zebra differ from one another; the huge cats probably resembled some other big modern feline more than they did the lion. Associated with them were many great beasts, whose like does not now exist on earth. The sabretooth was there, as formidable as his brother of the north, and, like this brother, bigger and more specialized than any of his Old World kin, which were probably already extinct. Among the ungulates of native origin was the long-necked, high-standing macrauchenia, shaped something like a huge, humpless camel or giraffe, and with a short proboscis. This

animal doubtless browsed among the trees. Another native ungulate, the toxodon, as big and heavily made as a rhinoceros, was probably amphibious, and had teeth superficially resembling those of a rodent. The edentates not only included various ground-sloths, among them the megatherium, which was the size of an elephant, and the somewhat smaller mylodon, but also creatures as fantastic as those of a nightmare. These were the glyptodons, which were bulkier than oxen and were clad in defensive plate-armor more complete than that of an armadillo; in one species the long, armored tail terminated in a huge spiked knob, like that of some forms of mediæval mace.

The glyptodons doubtless trusted for protection to their mailed coats. The ground-sloths had no armor. Like the terrestrial ant-bear of Brazil they walked slowly on the outer edges of their forefeet, which were armed with long and powerful digging claws. They could neither flee nor hide; and it seems a marvel that they could have held their own in the land against the big cats and sabretooth. Yet they persisted for ages, and spread northward from South America. It is hard to account for this. But it is just as hard to account for certain phenomena that are occurring before our very eyes. While journeying through the interior of Brazil, I not infrequently came across the big tamandua, the ant-bear or ant-eater. We found it not only in the forests but out on the marshes and prairies. It is almost as big as a small black bear. In its native haunts it is very conspicuous, both because of its size and its coloration, and as it never attempts to hide it is always easily seen. It is so slow that a man can run it down on foot. It has no teeth, and its long, curved snout gives its small head an almost bird-like

look. Its fore paws, armed with long, digging claws, are turned in, and it walks on their sides. It is long-haired and thick-hided, colored black and white, and with a long, bushy tail held aloft; and as it retreats at a wabbly canter, its brush shaking above its back, it looks anything but formidable. Yet it is a gallant fighter, and can inflict severe wounds with its claws, as well as hugging with its powerful fore legs; and if menaced it will itself fearlessly assail man or dog. When chased by hounds, in the open, I have seen one instantly throw itself on its back, in which position it was much more dangerous to the hounds than they were to it. Doubtless if attacked by a jaguar—and we killed jaguars in the immediate neighborhood—it would, if given a moment's warning, have defended itself in the same fashion. I suppose that this defense would be successful; for otherwise it seems incredible that such a conspicuous, slow-moving beast can exist at all in exactly the places where jaguars, able to kill a cow or horse, are plentiful. But, even so, it is difficult to understand how it has been able to persist for ages in company with the great spotted cat, the tyrant of the Brazilian wilderness. At any rate, with this example before us, we need not wonder overmuch at the ability of megatherium and mylodon to hold their own in the presence of the sabretooth.

In the late fall of 1913, as previously described, I motored north from the beautiful Andean lake, Nahuel Huapi, through the stony Patagonian plains to the Rio Negro. The only wild things of any size that we saw were the rheas, or South American ostriches, and a couple of guanacos, or wild llamas, small, swift, humpless camels, of which the ancestral forms were abundant in the North American Miocene. But one of my

companions, the distinguished Argentine explorer, educator, and man of science, Francisco Moreno, had some years previously made a discovery which showed that not many thousand years back, when the Indians had already come into the land, the huge and varied fauna of the Pleistocene still lingered at the foot of the Andes. He had found a cave in which savage men had dwelt; and in the cave were the remains of the animals which they had killed, or which had entered the cave at times when its human tenants were absent. Besides the weapons and utensils of the savages, he had found the grass which they had used for beds, and enclosures walled with stones for purposes of which he could not be sure. It will be remembered that in the cave-home of the 'Ndorobo which Kermit found there were beds of grass, and enclosures walled with brush, in which their dogs were kept. Whether these early Patagonian Indians had dogs I do not know; but many African tribes build low stone walls as foundations for sheds used for different purposes; and sometimes, among savages, it is absolutely impossible to guess the use to which a given structure is put unless it is actually seen in use—exactly as sometimes it is wholly impossible to divine what a particular specimen of savage pictorial art indicates unless the savage is there to explain it to his civilized brother.

Among the signs of human occupation Doctor Moreno found, well preserved in the cold cave, not only the almost fresh bones, but even pieces of the skin, of certain extinct animals. Among the species whose bones were found were the macrauchenia, tiger, horse, and mylodon. When Doctor Moreno said tiger, I asked if he did not mean jaguar; but he said no, that he meant a huge cat like an Old World lion or tiger; I do not know with what modern feline its affinities were

closest. The discovery of the comparatively fresh remains of the horse gave rise in some quarters to the belief that it was possible this species of horse survived to the day the Spaniards came to the Argentine and was partly ancestral to the modern Argentine horse; but the supposition is untenable, for the horse in question represents a very archaic and peculiar type, with specialized legs and an extraordinary skull, and could not possibly have had anything to do with the production of the wild, or rather feral, horses of the pampas and the Patagonian plains. Of the mylodon Doctor Moreno found not only comparatively fresh bones, with bits of sinew, but dried dung—almost as large as that of an elephant—and some big pieces of skin. The skin was clothed with long, coarse hair, and small ossicles were set into it, making minute bony plates. Doctor Moreno gave me a fragment of the skin, and also bones and dung; they are now in the American Museum of Natural History. The discovery gave rise to much fanciful conjecture; it was even said that the mylodon had been domesticated and kept tame in the caves; but Doctor Moreno laughed at the supposition and said that it lacked any foundation in fact. He also said that, contrary to what has sometimes been asserted, the age of the remains must be estimated in thousands, possibly ten thousands, and certainly not hundreds, of years.

There is no need of fanciful guesswork in order to enhance the startling character of the discovery. It seems to show beyond question that the early hunting savages of southernmost South America lived among the representatives of a huge fauna, now wholly extinct, just as was true of the earlier, and far more primitive, hunting savages of Europe.

Save in tropical Africa and in portions of hither and

farther India this giant fauna has now everywhere died out. In most regions, and in the earlier stages, man had little or nothing to do with its destruction. But during the last few thousand years he has been the chief factor in the extermination of the great creatures wherever he has established an industrial or agricultural civilization or semicivilization. The big cat he has warred against in self-defense. The elephant in India has been kept tame or half tame. The Old World horse has been tamed and transplanted to every portion of the temperate zones, and to the dry or treeless portions of the torrid zone.

Around the Mediterranean, the cradle of the ancient culture of our race, we have historic record of the process. Over three thousand years ago the Egyptian and Mesopotamian kings hunted the elephant in Syria. A thousand years later the elephant was a beast of war in the armies of the Greeks, the Carthaginians, and the Romans. Twenty-five hundred years ago the lion was a dreaded beast of ravin in the Balkan Peninsula and Palestine, as he was a hundred years ago in North Africa; now he is to be found south of the Atlas, or, nearing extinction, east of the Euphrates. Seemingly the horse was tamed long after the more homely beasts, the cattle, swine, goats, and sheep. He was not a beast for peaceful uses; he was the war-horse, whose neck was clothed with thunder, who pawed the earth when he heard the shouting of the captains. At first he was used not for riding, but to draw the war chariots. Rameses and the Hittites decided their great battles by chariot charges; the mighty and cruel Assyrian kings rode to war and hunting in chariots; the Homeric Greeks fought in chariots; Sisera ruled the land with his chariots of iron; and long after they had been

abandoned elsewhere war chariots were used by the champions of Erin. Cavalry did not begin to supersede them until less than a thousand years before our era; and from that time until gunpowder marked the beginning of the modern era the horse decided half the great battles of history.

But with this process primitive man had nothing to do. He was and, in the few remote spots where he still exists unchanged, he is wholly unable even to conceive of systematic war against the lion or of trying to tame the horse or elephant. These three, alone among the big beasts of the giant fauna in which the age of mammals had culminated, once throve in vast numbers from the Cape of Good Hope and the valley of the Nile northward to the Rhone and the Danube, eastward across India and Siberia, and from Hudson Bay to the Straits of Magellan. They were dominant figures in the life of all the five continents when primitive man had struggled upward from the plane of his ape-like ancestors and had become clearly human. For ages he was too feeble to be as much of a factor in their lives as they were in the lives of one another; and in North America he never became such a factor. The great man-killing cat was his dreaded enemy, to be fought only under the strain of direst need. The horse became a favorite prey when he grew cunning enough to devise snares and weapons. The elephant he feared and respected for its power and occasional truculence, and endeavored to destroy on the infrequent occasions when chance gave an opening to his own crafty ferocity.

All this is true, at the present day, in portions of mid-Africa. I have been with tribes whom only fear or imminent starvation could drive to attack the lion; and I have seen the naked warriors of the Nandi kill

the great, maned manslayer with their spears. Again and again, as an offering of peace and good-will, I have shot zebras for natives who greedily longed for its flesh. My son and I killed a rogue elephant bull at the earnest petition of a small Uganda tribe whose crops he had destroyed, whose field watchers he had killed, and whose village he menaced with destruction.

Of all the wonderful great beasts with which primitive man in his most primitive forms has been associated, the three with which on the whole this association was most wide-spread in time and space were the horse, the lion, and the elephant.

IX

BOOKS FOR HOLIDAYS IN THE OPEN

I AM sometimes asked what books I advise men or women to take on holidays in the open. With the reservation of long trips, where bulk is of prime consequence, I can only answer: the same books one would read at home. Such an answer generally invites the further question as to what books I read when at home. To this question I am afraid my answer cannot be so instructive as it ought to be, for I have never followed any plan in reading which would apply to all persons under all circumstances; and indeed it seems to me that no plan can be laid down that will be generally applicable. If a man is not fond of books, to him reading of any kind will be drudgery. I most sincerely commiserate such a person, but I do not know how to help him. If a man or a woman is fond of books, he or she will naturally seek the books that the mind and soul demand. Suggestions of a possibly helpful character can be made by outsiders, but only suggestions; and they will probably be helpful about in proportion to the outsider's knowledge of the mind and soul of the person to be helped.

Of course, if any one finds that he never reads serious literature, if all his reading is frothy and trashy, he would do well to try to train himself to like books that the general agreement of cultivated and sound-thinking persons has placed among the classics. It is as discreditable to the mind to be unfit for sustained mental effort as it is to the body of a young man to be unfit for sustained physical effort. Let man or woman, young

man or girl, read some good author, say Gibbon or Macaulay, until sustained mental effort brings power to enjoy the books worth enjoying. When this has been achieved, the man can soon trust himself to pick out for himself the particular good books which appeal to him.

The equation of personal taste is as powerful in reading as in eating; and within certain broad limits the matter is merely one of individual preference, having nothing to do with the quality either of the book or of the reader's mind. I like apples, pears, oranges, pineapples, and peaches. I dislike bananas, alligator-pears, and prunes. The first fact is certainly not to my credit, although it is to my advantage; and the second at least does not show moral turpitude. At times in the tropics I have been exceedingly sorry I could not learn to like bananas, and on round-ups in the cow country in the old days it was even more unfortunate not to like prunes; but I simply could not make myself like either, and that was all there was to it.

In the same way I read over and over again "Guy Mannering," "The Antiquary," "Pendennis," "Vanity Fair," "Our Mutual Friend," and the "Pickwick Papers"; whereas I make heavy weather of most parts of the "Fortunes of Nigel," "Esmond," and the "Old Curiosity Shop"—to mention only books I have tried to read during the last month. I have no question that the latter three books are as good as the first six; doubtless for some people they are better; but I do not like them, any more than I like prunes or bananas.

In the same way I read and reread "Macbeth" and "Othello"; but not "King Lear" or "Hamlet." I know perfectly well that the latter are as wonderful as the former—I wouldn't venture to admit my shortcomings regarding them if I couldn't proudly express

my appreciation of the other two! But at my age I might as well own up, at least to myself, to my limitations, and read the books I thoroughly enjoy.

But this does not mean permitting oneself to like what is vicious or even simply worthless. If any man finds that he cares to read "Bel Ami," he will do well to keep a watch on the reflex centres of his moral nature, and to brace himself with a course of Eugene Brieux or Henry Bordeaux. If he does not care for "Anna Karenina," "War and Peace," "Sebastopol," and "The Cossacks," he misses much; but if he cares for the "Kreutzer Sonata" he had better make up his mind that for pathological reasons he will be wise thereafter to avoid Tolstoï entirely. Tolstoï is an interesting and stimulating writer, but an exceedingly unsafe moral adviser.

It is clear that the reading of vicious books for pleasure should be eliminated. It is no less clear that trivial and vulgar books do more damage than can possibly be offset by any entertainment they yield. There remain enormous masses of books, of which no one man can read more than a limited number, and among which each reader should choose those which meet his own particular needs. There is no such thing as a list of "the hundred best books," or the "best five-foot library."

Dozens of series of excellent books, one hundred to each series, can be named, all of reasonably equal merit and each better for many readers than any of the others; and probably not more than half a dozen books would appear in all these lists. As for a "five-foot library," scores can readily be devised, each of which at some given time, for some given man, under certain conditions, will be best. But to attempt to create such a

library that shall be of universal value is foreordained to futility.

Within broad limits, therefore, the reader's personal and individual taste must be the guiding factor. I like hunting books and books of exploration and adventure. I do not ask any one else to like them. I distinctly do not hold my own preferences as anything whatever but individual preferences; and this chapter is to be accepted as confessional rather than didactic. With this understanding I admit a liking for novels where something happens; and even among these novels I can neither explain nor justify why I like some and do not like others; why, among the novels of Sienkiewicz, I cannot stand "Quo Vadis," and never tire of "With Fire and Sword," "Pan Michael," the "Deluge," and the "Knights of the Cross."

Of course I know that the best critics scorn the demand among novel readers for "the happy ending." Now, in really great books—in an epic like Milton's, in dramas like those of Æschylus and Sophocles—I am entirely willing to accept and even demand tragedy, and also in some poetry that cannot be called great, but not in good, readable novels of sufficient length to enable me to get interested in the hero and heroine!

There is enough of horror and grimness and sordid squalor in real life with which an active man has to grapple; and when I turn to the world of literature—of books considered as books, and not as instruments of my profession—I do not care to study suffering unless for some sufficient purpose. It is only a very exceptional novel which I will read if He does not marry Her; and even in exceptional novels I much prefer this consummation. I am not defending my attitude. I am merely stating it.

Therefore it would be quite useless for me to try to explain why I read certain books. As to how and when, my answers must be only less vague. I almost always read a good deal in the evening; and if the rest of the evening is occupied, I can at least get half an hour before going to bed. But all kinds of odd moments turn up during even a busy day, in which it is possible to enjoy a book; and then there are rainy afternoons in the country in autumn, and stormy days in winter, when one's work outdoors is finished and after wet clothes have been changed for dry, the rocking-chair in front of the open wood-fire simply demands an accompanying book.

Railway and steamboat journeys were, of course, predestined through the ages as aids to the enjoyment of reading. I have always taken books with me when on hunting and exploring trips. In such cases the literature should be reasonably heavy, in order that it may last. You can under these conditions read Herbert Spencer, for example, or the writings of Turgot, or a German study of the Mongols, or even a German edition of Aristophanes, with erudite explanations of the jokes, as you never would if surrounded by less formidable authors in your own library; and when you do reach the journey's end you grasp with eager appetite at old magazines, or at the lightest of literature.

Then, if one is worried by all kinds of men and events —during critical periods in administrative office, or at national conventions, or during congressional investigations, or in hard-fought political campaigns—it is the greatest relief and unalloyed delight to take up some really good, some really enthralling, book—Tacitus, Thucydides, Herodotus, Polybius, or Goethe, Keats, Gray, or Lowell—and lose all memory of everything grimy, and of the baseness that must be parried or conquered.

Like every one else, I am apt to read in streaks. If I get interested in any subject I read different books connected with it and probably also read books on subjects suggested by it. Having read Carlyle's "Frederick the Great"—with its splendid description of the battles, and of the unyielding courage and thrifty resourcefulness of the iron-tempered king; and with its screaming deification of able brutality in the name of morality, and its practice of the suppression and falsification of the truth under the pretense of preaching veracity—I turned to Macaulay's essay on this subject, and found that the historian whom it has been the fashion of the intellectuals to patronize or deride showed a much sounder philosophy and an infinitely greater appreciation of and devotion to truth than was shown by the loquacious apostle of the doctrine of reticence.

Then I took up Waddington's "Guerre de Sept Ans"; then I read all I could about Gustavus Adolphus; and, gradually dropping everything but the military side, I got hold of quaint little old histories of Eugene of Savoy and Turenne. In similar fashion my study of and delight in Mahan sent me farther afield, to read queer old volumes about De Ruyter and the daring warrior-merchants of the Hansa, and to study, as well as I could, the feats of Suffren and Tegethoff. I did not need to study Farragut.

Mahaffy's books started me to reread—in translation, alas!—the post-Athenian Greek authors. After Ferrero I did the same thing as regards the Latin authors, and then industriously read all kinds of modern writers on the same period, finishing with Oman's capital essay on "Seven Roman Statesmen." Gilbert Murray brought me back from Greek history to Greek literature, and thence by a natural suggestion to parts of the Old Testa-

ment, to the Nibelungenlied, to the Roland lay and the *chansons de gestes*, to Beowulf, and finally to the great Japanese hero-tale, the story of the Forty-Nine Ronins.

I read Burroughs too often to have him suggest anything save himself; but I am exceedingly glad that Charles Sheldon has arisen to show what a hunter-naturalist, who adds the ability of the writer to the ability of the trained observer and outdoor adventurer, can do for our last great wilderness, Alaska. From Sheldon I turned to Stewart Edward White, and then began to wander afar, with Herbert Ward's "Voice from the Congo," and Mary Kingsley's writings, and Hudson's "El Ombu," and Cuninghame Grahame's sketches of South America. A rereading of *The Federalist* led me to Burke, to Trevelyan's history of Fox and of our own Revolution, to Lecky; and finally by way of Malthus and Adam Smith and Lord Acton and Bagehot to my own contemporaries, to Ross and George Alger.

Even in pure literature, having nothing to do with history, philosophy, sociology, or economy, one book will often suggest another, so that one finds one has unconsciously followed a regular course of reading. Once I travelled steadily from Montaigne through Addison, Swift, Steele, Lamb, Irving, and Lowell to Crothers and Kenneth Grahame—and if it be objected that some of these *could* not have suggested the others I can only answer that they *did* suggest them.

I suppose that every one passes through periods during which he reads no poetry; and some people, of whom I am one, also pass through periods during which they voraciously devour poets of widely different kinds. Now it will be Horace and Pope; now Schiller, Scott, Longfellow, Körner; now Bret Harte or Kipling; now Shelley or Herrick or Tennyson; now Poe and Coleridge;

and again Emerson or Browning or Whitman. Sometimes one wishes to read for the sake of contrast. To me Owen Wister is the writer I wish when I am hungry with the memories of lonely mountains, of vast sunny plains with seas of wind-rippled grass, of springing wild creatures, and lithe, sun-tanned men who ride with utter ease on ungroomed, half-broken horses. But when I lived much in cow camps I often carried a volume of Swinburne, as a kind of antiseptic to alkali dust, tepid, muddy water, frying-pan bread, sow-belly bacon, and the too-infrequent washing of sweat-drenched clothing.

Fathers and mothers who are wise can train their children first to practise and soon to like the sustained mental application necessary to enjoy good books. They will do well also to give each boy or girl the mastery of at least some one foreign language, so that at least one other great literature, in addition to our own noble English literature, shall be open to him or her. Modern languages are taught so easily and readily that whoever really desires to learn one of them can soon achieve sufficient command of it to read ordinary books with reasonable ease; and then it is a mere matter of practice for any one to become able thoroughly to enjoy the beauty and wisdom which knowledge of the new tongue brings.

Now and then one's soul thirsts for laughter. I cannot imagine any one's taking a course in humorous writers, but just as little can I sympathize with the man who does not enjoy them at times—from Sydney Smith to John Phœnix and Artemus Ward, and from these to Stephen Leacock. Mark Twain at his best stands a little apart, almost as much so as Joel Chandler Harris. Oliver Wendell Holmes, of course, is the laughing philosopher, the humorist at his very highest, even

if we use the word "humor" only in its most modern and narrow sense.

A man with a real fondness for books of various kinds will find that his varying moods determine which of these books he at the moment needs. On the afternoon when Stevenson represents the luxury of enjoyment it may safely be assumed that Gibbon will not. The mood that is met by Napier's "Peninsular War," or Marbot's memoirs, will certainly not be met by Hawthorne or Jane Austen. Parkman's "Montcalm and Wolfe," Motley's histories of the Dutch Republic, will hardly fill the soul on a day when one turns naturally to the "Heimskringla"; and there is a sense of disconnection if after the "Heimskringla" one takes up the "Oxford Book of French Verse."

Another matter which within certain rather wide limits each reader must settle for himself is the dividing line between (1) not knowing anything about current books, and (2) swamping one's soul in the sea of vapidity which overwhelms him who reads *only* "the last new books." To me the heading employed by some reviewers when they speak of "books of the week" comprehensively damns both the books themselves and the reviewer who is willing to notice them. I would much rather see the heading "books of the year before last." A book of the year before last which is still worth noticing would probably be worth reading; but one only entitled to be called a book of the week had better be tossed into the waste-basket at once. Still, there are plenty of new books which are not of permanent value but which nevertheless are worth more or less careful reading; partly because it is well to know something of what especially interests the mass of our fellows, and partly because these books, although of ephemeral worth,

may really set forth something genuine in a fashion which for the moment stirs the hearts of all of us.

Books of more permanent value may, because of the very fact that they possess literary interest, also yield consolation of a non-literary kind. If any executive grows exasperated over the shortcomings of the legislative body with which he deals, let him study Macaulay's account of the way William was treated by his parliaments as soon as the latter found that, thanks to his efforts, they were no longer in immediate danger from foreign foes; it is illuminating. If any man feels too gloomy about the degeneracy of our people from the standards of their forefathers, let him read "Martin Chuzzlewit"; it will be consoling.

If the attitude of this nation toward foreign affairs and military preparedness at the present day seems disheartening, a study of the first fifteen years of the nineteenth century will at any rate give us whatever comfort we can extract from the fact that our great-grandfathers were no less foolish than we are.

Nor need any one confine himself solely to the affairs of the United States. If he becomes tempted to idealize the past, if sentimentalists seek to persuade him that the "ages of faith," the twelfth and thirteenth centuries, for instance, were better than our own, let him read any trustworthy book on the subject—Lea's "History of the Inquisition," for instance, or Coulton's abridgment of Salimbene's memoirs. He will be undeceived and will be devoutly thankful that his lot has been cast in the present age, in spite of all its faults.

It would be hopeless to try to enumerate all the books I read, or even all the kinds. The foregoing is a very imperfect answer to a question which admits of only such an answer.

X

BIRD RESERVES AT THE MOUTH OF THE MISSISSIPPI

On June 7, 1915, I was the guest of my friend John M. Parker, of New Orleans, at his house at Pass Christian, Mississippi. For many miles west, and especially east, of Pass Christian, there are small towns where the low, comfortable, singularly picturesque and attractive houses are owned, some by Mississippi planters, some by city folk who come hither from the great Southern cities, and more and more in winter-time from the great Northern cities also, to pass a few months. The houses, those that are isolated and those in the little towns, stand in what is really one long row; a row broken by vacant reaches, but as a whole stretching for sixty miles, with the bright waters of the Gulf lapping the beach in front of them and behind them leagues of pine forest. Between the Gulf and the waters lies a low ridge or beach of white sand. It is hard to make anything grow in this sand; but the owners of the houses have succeeded, using dead leaves and what manure is available; and in this leaf-mould the trees and grasses and flowers grow in profusion. Long, flimsy wooden docks stretch out into the waters of the Gulf; there is not much bad weather, as a rule, but every few years there comes a terrible storm which wrecks buildings and bridges, destroys human lives by the thousand, washes the small Gulf sailing craft ashore, and sweeps away all the docks.

Our host's house was cool and airy, with broad, covered verandas, and mosquito screens on the doors

and the big windows. The trees in front were live-oaks, and others of his own planting—magnolias, pecans, palms, and a beautiful mimosa. The blooming oleanders and hydrangeas were a delight to the eye. Behind, the place stretched like a long ribbon to the edge of the fragrant pine forest, where the long-leaved and loblolly-pines rose like tall columns out of the needle-covered sand. Five pairs of mocking-birds and one pair of thrashers had just finished nesting; at dawn, when the crescent of the dying moon had risen above the growing light in the east, the mockers sang wonderfully, and after a while the thrasher chimed in. Only the singing of nightingales where they are plentiful, as in some Italian woods, can compare in strength and ecstasy and passion, in volume and intricate change and continuity, with the challenging love-songs of many mockers, rivalling one another, as they perch and balance and spring upward and float downward through the branches of live-oak or magnolia, after sunset and before sunrise, and in the warm, still, brilliant moonlight of spring and early summer.

There were other birds. The soldierly looking red-headed woodpeckers, in their striking black, red, and white uniform, were much in evidence. Gaudy-painted finches, or "nonpareils," were less conspicuous only because of their small size. Blue jays had raised their young in front of the house, and, as I was informed, had been successfully beaten off by the mockers and thrashers when they attempted assaults on the eggs and nestlings of the latter. Purple martins darted through the air. King-birds chased the big grackles and the numerous small fish-crows—not so very much bigger than the grackles—which uttered queer, hoarse croakings. A pair of crested flycatchers had their nest

in a hollow in a tree; the five boldly marked eggs rested, as usual, partly on a shed snake-skin. How, I wonder, through the immemorial ages, and why, did this particular bird develop its strange determination always, where possible, to use a snake's cast-off skin in building its nest? Every season, I was told, this flycatcher nested in the same hollow; and every season the hollow was previously nested in by a tufted tit-mouse. Loggerhead shrikes were plentiful. Insects were their usual food, but they also pounced on small birds, mice, and lizards, and once on a little chicken. They impale their prey on locust thorns and on the spines of other trees and bushes; and I have known a barbed-wire fence to be decorated with the remains of their victims. There were red cardinal-birds; and we saw another red bird also, a summer tanager.

But the most interesting birds on the place were not wild, being nothing more nor less than ordinary fowls engaged in what to me were most unordinary occupations. Parker had several hundred fowls, and had by trial discovered the truth of the statement that capons make far better mothers than do hens, especially for very young chicks. We saw dozens of broods of chickens, and one or two of young guinea-fowl, being taken care of by caponized bantams, game-cocks, and cochin-chinas. These improvised mothers looked almost precisely as they did before being caponized, the differences, chiefly in the color of the comb, being insignificant, for they were full-grown birds when operated on. But their natures had suffered the most extraordinary change, for they had developed not only the habits but the voices of unusually exemplary mother hens. They never crowed; they clucked precisely like hens; and they protected, covered, fed, and led about

their broods just like hens. They were timid, except in defense of the chicks; but on their behalf they were really formidable fighters. The change in habits takes place with extraordinary rapidity. In a few hours the cock has completely changed and can be placed with a brood which he promptly adopts. In perhaps one case in ten he does not take readily to his duties as an *ex-officio* hen; and in such case the further measure adopted seems as incredible as the rest of the performance, for he is made drunk with whiskey, acts as if he were intoxicated, and then promptly develops maternal feelings, and zealously enters on his new career.

We saw game-cocks clucking and calling to their broods of little chicks, to get them to the crumbs we tossed to them, and then sitting with the chicks not only under their wings but on their backs. They kept the broods with them until the young were nearly as large as they were; in one case the brood consisted of guinea-fowl. Moreover, they welcomed any brood, no matter how large. One big rooster was leading around so many chickens—all, by what seemed a sardonic jest, his own progeny, the progeny of the days when he was a mere unregenerate father—that when they took shelter under him he had to spread his wings; "like a buzzard," said my host, to whom soaring buzzards were familiar sights. Of course the extraordinary part of all this was not the loss of the male qualities but the immediate and complete acquirement of those of the female. It was as if steers invariably took to mothering calves, or geldings to adopting foals.

These capon-mothers, with their weight and long spurs, fought formidably for their chicks. In one case a Cooper's hawk swooped on a half-grown chick, whereupon the game-cock who was officiating as hen flew

at the aggressor, striking it so hard as to injure the top of the wing. The hawk was unable to fly, and the cock pressed it too close to let it escape. Although the rooster could not kill the hawk, for the latter threw itself on its back with extended talons, he had rendered it unable to escape, and one of the men about the place came up and killed it, having been attracted by the noise of the fight. Another cock killed a big black snake which tried to carry off one of the chicks. The cock darted to and fro over the snake, striking it continually until it succumbed.

Pass Christian is an ideal place for a man to go who wishes to get away from the Northern cold for a few weeks, and be where climate, people, and surroundings are all delightful, and the fishing and shooting excellent. There is a good chance, too, that the fish and game will be preserved for use, instead of recklessly exterminated; for during the last dozen years Louisiana and Mississippi, like the rest of the Union, have waked to the criminality of marring and ruining a beautiful heritage which should be left, and through wise use (not non-use) can be left, undiminished, to the generations that are to come after us. As yet the Gulf in front of the houses swarms with fish of many kinds up to the great tarpon, the mailed and leaping giant of the warm seas; and with the rapid growth of wisdom in dealing with nature we may hope that there will soon be action looking toward the regulation of seining and to protection of the fish at certain seasons. On land the quail have increased in the neighborhood of Pass Christian during the last few years. This is largely due to the activity of my host and his two sons as hunters. They have a pack of beagles, trained to night-work, and this pack has to its credit nearly four hundred coons and

possums—together with an occasional skunk!—and, moreover, has chevied the gray foxes almost out of the country; and all these animals are the inveterate enemies of all small game, and especially of ground-nesting birds. To save interesting creatures, it is often necessary not merely to refrain from killing them but also to war on their enemies.

One of the sons runs the Parker stock-farm in upper Louisiana, beside the Mississippi. There are about four thousand acres, half of it highland, the other half subject to flood if the levees break. Five years ago such a break absolutely destroyed the Parker plantations, then exclusively on low land. Now, in event of flood, the stock can be driven and the human beings escape to the higher ground. Young Parker, now twenty-two years old, has run the plantation since he was sixteen. The horses, cattle, and sheep are all of the highest grade; the improvement in the stock of Louisiana and Mississippi during the last two decades has been really noteworthy. Game, and wild things generally, have increased in numbers on this big stock-farm. There is no wanton molestation of any animal permitted, no plundering of nests, no shooting save within strictly defined limits, and so far as possible all rare things are given every chance to increase. As an example, when, in clearing a tract of swamp land, a heron's nest was discovered, the bushes round about were left undisturbed, and the heron family was reared in safety. Wild turkeys have somewhat, and quail very markedly, increased. The great horned owls which destroyed the ducks have to be warred against, and the beasts of prey likewise. Surely it will ultimately again be recognized in our country that life on a plantation, on a great stock-farm or ranch, is one of

the most interesting, and, from the standpoint of both body and soul, one of the most healthy, of all ways of earning a living.

At four on the morning of the 8th our party started from the wharf in front of Pass Christian. We were in two boats. One, good-sized and comfortable, under the command of Captain Lewis Young, was the property of the State Conservation Commission of Louisiana, the commission having most courteously placed it at our disposal. On this boat were my host, his two sons, John, Jr., and Tom, myself, and a photographer, Mr. Coquille, of New Orleans. The other boat, named the *Royal Tern*, was the property of the Audubon Society, being allotted to the work of cruising among and protecting the bird colonies on those islands set apart as bird refuges by the national and state governments. On this boat—which had a wretched engine, almost worthless—went Mr. Herbert K. Job and Mr. Frank M. Miller. Mr. Miller was at one time president of the Louisiana Conservation Commission, and the founder of the Louisiana State Audubon Society, and is one of the group of men to whom she owes it that she, the home State of Audubon, our first great naturalist, is now thoroughly awake to the danger of reckless waste and destruction of all the natural resources of the State, including the birds. Mr. Herbert K. Job is known to all who care for bird study and bird preservation. He is a naturalist who has made of bird-photography a sport, a science, and an art. His pictures, and his books in which these pictures appear, are fascinating both to the scientific ornithologist and to all lovers of the wild creatures of the open. Like the other field naturalists I have known, like the men who were with me in Africa and South America, Mr. Job

is an exceptionally hardy, resolute, and resourceful man, following his wilderness work with single-minded devotion, and continually, and in matter-of-fact manner, facing and overcoming hardship, wearing toil, and risk which worthy stay-at-home people have no means whatever of even gauging. I owed the pleasure of Mr. Job's company to Mr. Frank M. Chapman, at whose suggestion he was sent with me by the National Audubon Society.

The State Conservation Commission owes its existence to the wise public spirit and far-sightedness of the Louisiana legislature. The Audubon Society, which has done far more than any other single agency in creating and fostering an enlightened public sentiment for the preservation of our useful and attractive birds, is a purely voluntary organization, consisting of men and women who in these matters look further ahead than their fellows, and who have the precious gift of sympathetic imagination, so that they are able to see, and to wish to preserve for their children's children, the beauty and wonder of nature. (During the year preceding this trip, by the way, the society enrolled one hundred and fifty-one thousand boys and girls in its junior bird clubs, all of which give systematic instruction in the value of bird life.) It was the Audubon Society which started the movement for the establishment of bird refuges. The society now protects and polices about one hundred of these refuges, which, of course, are worthless unless thus protected.

The *Royal Tern* is commanded by Captain William Sprinkle, born and bred on this Gulf coast, who knows the sea-fowl, and the islands where they breed and dwell, as he knows the winds and the lovely, smiling, treacherous Gulf waters. He is game-warden, and he and

the *Royal Tern* are the police force for over five hundred square miles of sand-bars, shallow waters, and intricate channels. The man and the boat are two of the chief obstacles in the way of the poachers, the plume-hunters, and eggers, who always threaten these bird sanctuaries.

Many of these poachers are at heart good men, who follow their fathers' business, just as respectable men on the seacoast once followed the business of wrecking. But when times change and a once acknowledged trade comes under the ban of the law the character of those following it also changes for the worse. Wreckers are no longer respectable, and plume-hunters and eggers are sinking to the same level. The illegal business of killing breeding-birds, of leaving nestlings to starve wholesale, and of general ruthless extermination, more and more tends to attract men of the same moral category as those who sell whiskey to Indians and combine the running of "blind pigs" with highway robbery and murder for hire.

In Florida one of the best game-wardens of the Audubon Society was killed by these sordid bird-butchers. A fearless man and a good boat are needed to keep such gentry in awe. Captain Sprinkle meets the first requirement, the hull of the *Royal Tern* the second. But the engines of the *Tern* are worthless; she can catch no freebooter; she is safe only in the mildest weather. Is there not some bird-lover of means and imagination who will put a good engine in her? Such a service would be very real. As for Captain Sprinkle, his services are, of course, underpaid, his salary bearing no relation to their value. The Biological Survey does its best with its limited means; the Audubon Society adds something extra; but this very efficient and disinterested laborer is worth

a good deal more than the hire he receives. The government pays many of its servants, usually those with rather easy jobs, too much; but the best men, who do the hardest work, the men in the life-saving and lighthouse service, the forest-rangers, and those who patrol and protect the reserves of wild life, are almost always underpaid.

Yet, in spite of all the disadvantages, much has been accomplished. This particular reservation was set apart by presidential proclamation in 1905. Captain Sprinkle was at once put in charge. Of the five chief birds, the royal terns, Caspian terns, Cabot's terns, laughing gulls, and skimmers, there were that season about one thousand nests. This season, ten years later, there are about thirty-five thousand nests. The brown pelicans and Louisiana herons also show a marked increase. The least tern, which had been completely exterminated or driven away, has returned and is breeding in fair numbers.

As we steamed away from the Pass Christian dock, dawn was turning to daylight under the still brilliant crescent moon. Soon we saw the red disk of the sun rising behind the pine forest. We left Mississippi Sound, and then were on the Gulf itself. The Gulf was calm, and the still water teemed with life. Each school of mullets or sardines could be told by the queer effect on the water, as of a cloud shadow. Continually we caught glimpses of other fish; and always they were fleeing from death or ravenously seeking to inflict death on the weak. Nature is ruthless, and where her sway is uncontested there is no peace save the peace of death; and the fecund stream of life, especially of life on the lower levels, flows like an immense torrent out of non-existence for but the briefest moment before the

enormous majority of the beings composing it are engulfed in the jaws of death, and again go out into the shadow.

Huge rays sprang out of the water and fell back with a resounding splash. Devil-fish, which made the rays look like dwarfs, swam slowly near the surface; some had their mouths wide open as they followed their prey. Globular jellyfish, as big as pumpkins, with translucent bodies, pulsed through the waters; little fishes and crabs swam among their short, thick tentacles and in between the waving walls into which the body was divided. Once we saw the head of a turtle above water; it was a loggerhead turtle, and the head was as large as the head of a man; when I first saw it, above the still water, I had no idea what it was.

By noon we were among the islands of the reservation. We had already passed other and larger islands, for the most part well wooded. On these there were great numbers of coons and minks, and therefore none of the sea-birds which nest on the ground or in low bushes. The coons are more common than the minks and muskrats. In the inundations they are continually being carried out to sea on logs; a planter informed me that on one occasion in a flood he met a log sailing down the swollen Mississippi with no less than eleven coons aboard. Sooner or later castaway coons land on every considerable island off the coast, and if there is fresh water, and even sometimes if there is none, they thrive; and where there are many coons, the gulls, terns, skimmers, and other such birds have very little chance to bring up their young. Coons are fond of rambling along beaches; at low tide they devour shell-fish; and they explore the grass tufts and bushes, and eat nestlings, eggs, and even the sitting birds. If on any island we

found numerous coon tracks there were usually few nesting sea-fowl, save possibly on some isolated point. The birds breed most plentifully in the numberless smaller islands—some of considerable size—where there is no water, and usually not a tree. Some of these islands are nothing but sand, with banks and ramparts of shells, while others are fringed with marsh-grass and covered with scrub-mangrove. But the occasional fierce tropical storms not only change the channels and alter the shape of many of the islands, but may even break up some very big island. In such case an island with trees and water may for years be entirely uninhabited by coons, and the birds may form huge rookeries thereon. The government should exterminate the coons and minks on all the large islands, so as to enable the birds to breed on them; for on the small islands the storms and tides work huge havoc with the nests.

Captain Young proved himself not only a first-class captain but a first-class pilot through the shifting and tangled maze of channels and islands. The *Royal Tern*, her engines breaking down intermittently, fell so far in the rear that in the early afternoon we anchored to wait for her, off an island to which a band of pelicans resorted—they had nested, earlier in the year, on another island some leagues distant. The big birds, forty or thereabouts in number, were sitting on a sand-spit which projected into the water, enjoying a noontide rest. As we approached they rose and flapped lazily out to sea for a few hundred yards before again lighting. Later in the afternoon they began to fly to the fishing-grounds, and back and forth, singly and in small groups. In flying they usually gave a dozen rapid wing-beats, and then sailed for a few seconds. If several were together the leader gave the "time" to the others; they

all flapped together, and then all glided together. The neck was carried in a curve, like a heron's; it was only stretched out straight like a stork's or bustard's when the bird was diving. Some of the fishing was done, singly or in parties, in the water, the pelicans surrounding shoals of sardines and shrimps, and scooping them up in their capacious bags. But, although such a large, heavy bird, the brown pelican is an expert wing-fisherman also. A pair would soar round in circles, the bill perhaps pointing downward, instead of, as usual, being held horizontally. Then, when the fish was spied the bird plunged down, almost perpendicularly, the neck stretched straight and rigid, and disappeared below the surface of the water with a thump and splash, and in a couple of seconds emerged, rose with some labor, and flew off with its prey. At this point the pelicans had finished breeding before my arrival—although a fortnight later Mr. Job found thousands of fresh eggs in their great rookeries west of the mouth of the Mississippi. The herons had well-grown nestlings, whereas the terns and gulls were in the midst of the breeding, and the skimmers had only just begun. The pelicans often flew only a few yards, or even feet, above the water, but also at times soared or wheeled twenty or thirty rods in the air, or higher. They are handsome, interesting birds, and add immensely, by their presence, to the pleasure of being out on these waters; they should be completely protected everywhere—as, indeed, should most of these sea-birds.

The two Parker boys—the elder of whom had for years been doing a man's work in the best fashion, and the younger of whom had just received an appointment to Annapolis—kept us supplied with fish, caught with the hook and rod, except the flounders which were

harpooned. The two boys were untiring; nothing impaired their energy, and no chance of fatigue and exertion, at any time of the day or night, appealed to them save as an exhilarating piece of good fortune. At a time when so large a section of our people, including especially those who claim in a special sense to be the guardians of cultivation, philanthropy, and religion, deliberately make a cult of pacificism, poltroonery, sentimentality, and neurotic emotionalism, it was refreshing to see the fine, healthy, manly young fellows who were emphatically neither "too proud to fight" nor too proud to work, and with whom hard work and gentle regard for the rights of others and the joy of life, all went hand in hand.

Toward evening of our first day the weather changed for the worse; the fishers among the party were recalled, and just before nightfall we ran off, and after much groping in the dark we made a reasonably safe anchorage. By midnight the wind fell, dense swarms of mosquitoes came aboard, and, as our mosquito-nets were not well up (thanks partly to our own improvidence, and partly to the violence of the wind, for we were sleeping on deck because of the great heat), we lived in torment until morning. On the subsequent nights we fixed our mosquito-bars so carefully that there was no trouble. Mosquitoes and huge, green-headed horse-flies swarm on most of the islands. I witnessed one curious incident in connection with one of these big, biting horse-flies. A kind of wasp preys on them, and is locally known as the "horse-guard," or "sheriff-fly," accordingly. These horse-guards are formidable-looking things and at first rather alarm strangers, hovering round them and their horses; but they never assail beast or man unless themselves mo-

lested, when they are ready enough to use their powerful sting. The horses and cattle speedily recognize these big, humming, hornet-like horse-guards as the foes of their tormentors. As we walked over the islands and the green-headed flies followed us, horse-guards also joined us; and many greenheads and some horse-guards came on board. Usually when the horse-guard secured the greenhead it was pounced on from behind, and there was practically no struggle—the absence of struggle being usual in the world of invertebrates, where the automaton-like actions of both preyer and prey tend to make each case resemble all others in its details. But on one occasion the greenhead managed to turn, so that he fronted his assailant and promptly grappled with him, sinking his evil lancet into the wasp's body and holding the wasp so tight that the latter could not thrust with its sting. They grappled thus for several minutes. The horse-guard at last succeeded in stabbing its antagonist and promptly dropped the dead body. Evidently it had suffered much, for it vigorously rubbed the wounded spot with its third pair of legs, walked hunched up, and was altogether a very sick creature.

On the following day we visited two or three islands which the man-of-war birds were using as roosts. These birds are the most wonderful fliers in the world. No other bird has such an expanse of wing in proportion to the body weight. No other bird of its size seems so absolutely at home in the air. Frigate-birds—as they are also called—hardly ever light on the water, yet they are sometimes seen in mid-ocean. But they like to live in companies, near some coast. They have very long tails, usually carried closed, looking like a marlinespike, but at times open, like a great pair of scissors, in the course of their indescribably graceful

aerial evolutions. We saw them soaring for hours at a time, sometimes to all seeming absolutely motionless as they faced the wind. They sometimes caught fish for themselves, just rippling the water to seize surface swimmers, or pouncing with startling speed on any fish which for a moment leaped into the air to avoid another shape of ravenous death below. If the frigate-bird caught the fish transversely, it rose, dropped its prey, and seized it again by the head before it struck the water. But it also obtained its food in less honorable fashion—by robbing other birds. The pelicans were plundered by *all* their fish-eating neighbors, even the big terns; but the man-of-war bird robbed the robbers. We saw three chase a royal tern, a very strong flier; the tern towered, ascending so high we could hardly see it, but in great spirals its pursuers rose still faster, until one was above it; and then the tern dropped the fish, which was snatched in mid-air by one of the bandits. Captain Sprinkle had found these frigate-birds breeding on one of the islands the previous year, each nest being placed in a bush and containing two eggs. We visited the island; the big birds—the old males jet-black, the females with white breasts, the young males with white heads—were there in numbers, perched on the bushes, and rising at our approach. But there were no nests, and, although we found one fresh egg, it was evidently a case of sporadic laying, having nothing to do with home-building.

On another island, where we also found a big colony of frigate-birds roosting on the mangrove and Gulf tamarisk scrub, there was a small heronry of the Louisiana heron. The characteristic flimsy heron nests were placed in the thick brush, which was rather taller than a man's head. The young ones had left the nests,

but were still too young for anything in the nature of sustained flight. They were, like all young herons, the pictures of forlorn and unlovely inefficiency, as they flapped a few feet away and strove with ungainly awkwardness to balance themselves on the yielding bush tops. The small birds we found on the islands were red-winged blackbirds, Louisiana seaside-sparrows, and long-billed marsh-wrens—which last had built their domed houses among the bushes, in default of tall reeds. On one island Job discovered a night-hawk on her nest. She fluttered off, doing the wounded-bird trick, leaving behind her an egg and a newly hatched chick. He went off to get his umbrella-house, and when he returned the other egg was hatching, and another little chick, much distressed by the heat, appeared. He stood up a clam-shell to give it shade, and then, after patient waiting, the mother returned, and he secured motion-pictures of her and her little family. These birds offer very striking examples of real protective coloration.

The warm shallows, of course, teem with mollusks as well as with fish—not to mention the shrimps, which go in immense silver schools, and which we found delicious eating. The occasional violent storms, when they do not destroy islands, throw up on them huge dikes or ramparts of shells, which makes the walking hard on the feet.

There are more formidable things than shells in the warm shallows. The fishermen as they waded near shore had to be careful lest they should step on a sting-ray. When a swim was proposed as our boat swung at anchor in mid-channel under the burning midday sun, Captain Sprinkle warned us against it because he had just seen a large shark. He said that sharks

rarely attacked men, but that he had known of two instances of their doing so in Mississippi Sound, one ending fatally. In this case the man was loading a sand schooner. He was standing on a scaffolding, the water half-way up his thighs, and the shark seized him and carried him into deep water. Boats went to his assistance at once, scaring off the shark; but the man's leg had been bitten nearly in two; he sank, and was dead when he was finally found.

The following two days we continued our cruise. We steamed across vast reaches of open Gulf, the water changing from blue to yellow as it shoaled. Now and then we sighted or passed low islands of bare sand and scrub. The sky was sapphire, the sun splendid and pitiless, the heat sweltering. We came across only too plain evidence of the disasters always hanging over the wilderness folk. A fortnight previously a high tide and a heavy blow had occurred coincidentally. On the islands where the royal terns especially loved to nest the high water spelled destruction. The terns nest close together, in bird cities, so to speak, and generally rather low on the beaches. On island after island the waves had washed over the nests and destroyed them by the ten thousand. The beautiful royal terns were the chief sufferers. On one island there was a space perhaps nearly an acre in extent where the ground was covered with their eggs, which had been washed thither by the tide; most of them had then been eaten by those smart-looking highwaymen, the trim, slate-headed laughing gulls. The terns had completely deserted the island and had gone in their thousands to another; but some skimmers remained and were nesting. The westernmost island we visited was outside the national reservation, and

that very morning it had been visited and plundered by a party of eggers. The eggs had been completely cleared from most of the island, gulls and terns had been shot, and the survivors were in a frantic state of excitement. It was a good object-lesson in the need of having reserves and laws protecting wild life, and a sufficient number of efficient officers to enforce the laws and protect the reserves. Defenders of the short-sighted men who in their greed and selfishness will, if permitted, rob our country of half its charm by their reckless extermination of all useful and beautiful wild things sometimes seek to champion them by saying that "the game belongs to the people." So it does; and not merely to the people now alive, but to the unborn people. The "greatest good of the greatest number" applies to the number within the womb of time, compared to which those now alive form but an insignificant fraction. Our duty to the whole, including the unborn generations, bids us restrain an unprincipled present-day minority from wasting the heritage of these unborn generations. The movement for the conservation of wild life and the larger movement for the conservation of all our natural resources are essentially democratic in spirit, purpose, and method.

On some of the islands we found where green turtles had crawled up the beaches to bury their eggs in the sand. We came across two such nests. One of them I dug up myself. The eggs we took to the boat, where they were used in making delicious pancakes, which went well with fresh shrimp, flounder, weakfish, mackerel, and mullet.

The laughing gulls and the black skimmers were often found with their nests intermingled, and they hovered over our heads with the same noisy protest

against our presence. Although they often—not always—nested so close together, the nests were in no way alike. The gulls' dark-green eggs heavily blotched with brown, two or three in number, lay on a rude platform of marsh-grass, which was usually partially sheltered by some bush or tuft of reeds, or, if on wet ground, was on a low pile of driftwood. The skimmers' eggs, light whitish green and less heavily marked with brown, were, when the clutch was full, four to six in number. There was no nest at all, nothing but a slight hollow in the sand, or gravel or shell débris. In the gravel or among the shell débris it was at first hard to pick out the eggs; but as our eyes grew accustomed to them we found them without difficulty. Sometimes we found the nests of gull and skimmer within a couple of feet of one another, one often under or in a bush, the other always out on the absolutely bare open. Considering the fact that the gull stood ready, with cannibal cheerfulness, to eat the skimmer's eggs if opportunity offered, I should have thought that to the latter bird such association would have seemed rather gruesome; but, as a matter of fact, there seemed to be no feeling of constraint whatever on either side, and the only fighting I saw, and this of a very mild type, was among the gulls themselves. As we approached their nesting-places all these birds rose, and clamored loudly as they hovered over us, lighting not far off, and returning to their nests as we moved away.

The skimmers are odd, interesting birds, and on the whole were, if anything, rather tamer even than the royal terns and laughing gulls, their constant associates. They came close behind these two in point of abundance. They flew round and round us, and to and fro, continually uttering their loud single note, the bill being held

half open as they did so. The lower mandible, so much longer than the upper, gives them a curious look. Ordinarily the bill is held horizontally and closed; but when after the small fish on which they feed the lower mandible is dropped to an angle of forty-five degrees, ploughing lightly the surface of the water and scooping up the prey. They fly easily, with at ordinary times rather deliberate strokes of their long wings, wheeling and circling, and continually crying if roused from their nests. When flying, the white of their plumage is very conspicuous, and as they flapped around every detail of form and coloration, of bill and plumage, could be observed.

When sitting, they appear almost black, and, in consequence, when on their nests, on the beaches, or on the white-shell dikes, they are visible half a mile off, and stand out as distinctly as a crow on a snow-bank.* They are perfectly aware of this, and make no attempt to elude observation, any more than the gulls and terns do. The fledglings are concealingly colored, and crouch motionless, so as to escape notice from possible enemies; and the eggs, while they do not in color harmonize with the surroundings to the extent that they might artificially be made to do, yet easily escape the eye when laid on a beach composed of broken sea-shells. But the coloration of the adults is of a strikingly advertising character, under all circumstances, and especially when they are sitting on their nests. Among all the vagaries of the fetichistic school of concealing-colorationists none is more amusing than the belief that the coloration of the adult skimmer is ever, under any conditions, of a concealing quality. Sometimes the brooding skimmer

* An expression borrowed from Stewart Edward White's capital "Rediscovered Country."

attempted to draw us away from the nest by fluttering off across the sand like a wounded bird. Like the gulls, the skimmers moved about much more freely on the ground than did the terns.

The handsome little laughing gull was found everywhere, and often in numerous colonies, although these colonies were not larger than those of the skimmer, and in no way approached the great breeding assemblages of the royal terns on the two or three islands where the latter especially congregated. They were noisy birds, continually uttering a single loud note, but only occasionally the queer laughter which gives them their name. They looked very trim and handsome, both on the wing and when swimming or walking; and their white breasts and dark heads made them very conspicuous on their nests, no matter whether these were on open ground or partially concealed in a bush or reed cluster. Like the skimmers, although perhaps not quite so markedly, their coloration was strongly advertising at all times, including when on their nests. Their relations with their two constant associates and victims, the skimmer and the royal tern—the three being about the same size—seemed to me very curious. The gull never molested the eggs of either of the other birds if the parents were sitting on them or were close by. But gulls continually broke and devoured eggs, especially terns' eggs, which had been temporarily abandoned. Nor was this all. When a colony of nesting royal terns flew off at our approach, the hesitating advent of the returning parents was always accompanied by the presence of a few gulls. Commonly the birds lit a few yards away from the eggs, on the opposite side from the observer, and then by degrees moved forward among the temporarily for-

saken eggs. The gulls were usually among the foremost ranks, and each, as it walked or ran to and fro, would now and then break or carry off an egg; yet I never saw a tern interfere or seem either alarmed or angered. These big terns are swifter and better fliers than the gulls, and the depredations take place all the time before their eyes. Yet they pay no attention that I could discern to the depredation. Compare this with the conduct of king-birds to those other egg-robbers, the crows. Imagine a king-bird, or, for that matter, a mocking-bird or thrasher, submitting with weak good humor to such treatment! If these big terns had even a fraction of the intelligence and spirit of king-birds, no gull would venture within a half-mile of their nesting-grounds.

It is one of the innumerable puzzles of biology that the number of eggs a bird lays seems to have such small influence on the abundance of the species. A royal tern lays one egg, rarely two; a gull three; a skimmer four to six. The gull eats the eggs of the other two, especially of the tern; as far as we know, all have the same foes; yet the abundance of the birds is in inverse ratio to the number of their eggs. Of course there is an explanation; but we cannot even guess at it as yet. With this, as with so many other scientific questions, all we can say is, with Huxley, that we are not afraid to announce that we do not know.

The beautiful royal terns were common enough, flying in the air and diving boldly after little fish. We listened with interest to their cry, which was a kind of creaking bleat. We admired the silver of their plumage as they flew overhead. But we did not come across vast numbers of them assembled for breeding until the fourth day. Then we found them on an island

on which Captain Sprinkle told us he had never before found them, although both skimmers and gulls had always nested on it. The previous fall he had waged war with traps against the coons, which, although there was no fresh water, had begun to be plentiful on the island. He had caught a number, two escaping, one with the loss of a hind foot, and one with the loss of a fore foot. The island was seven miles long, curved, with occasional stretches of salt marsh, and with reaches of scrub, but no trees. Most of it was bare sand. We saw three coon tracks, two being those of the three-footed animals; evidently the damaged leg was now completely healed and was used like the others, punching a round hole in the sand. We saw one coon, at dusk, hunting for oysters at the water's edge.

The gulls and skimmers were nesting on this island in great numbers, but the terns were many times more plentiful. There were thousands upon thousands of them. Their breeding-places were strung in a nearly straight line for a couple of miles along the sand flats. A mile off, from our boat, we were attracted by their myriad forms, glittering in the brilliant sunlight as they rose and fell and crossed and circled over the nesting-places. The day was bright and hot, and the sight was one of real fascination. As we approached a breeding colony the birds would fly up, hover about, and resettle when we drew back a sufficient distance. The eggs, singly, or rarely in pairs, were placed on the bare sand, with no attempt at a nest, the brooding bird being sometimes but a few inches, sometimes two or three feet, from the nearest of its surrounding neighbors. The colonies of breeders were scattered along the shore for a couple of miles, each one being one or two hundred

yards, or over, from the next. In one such breeding colony I counted a little over a thousand eggs; there were several of smaller size, and a few that were larger, one having perhaps three times as many. A number of the eggs, perhaps ten per cent, had been destroyed by the gulls; the coons had ravaged some of the gulls' nests, which were in or beside the scrub. The eggs of the terns, being so close together and on the bare sand, were very conspicuous; they were visible to a casual inspection at a distance of two or three hundred yards, and it was quite impossible for any bird or beast to overlook them near by. These gregarious nesters, whose eggs are gathered in a big nursery, cannot profit by any concealing coloration of the eggs. The eggs of the royal and Cabot's terns were perhaps a shade less conspicuous than the darker eggs of the Caspian tern, all of them lying together; but on that sand, and crowded into such a regular nursery, none of them could have escaped the vision of any foe with eyes. As I have said, the eggs of the skimmer, as the clutches were more scattered, were much more difficult to make out, on the shell beaches. Concealing coloration has been a survival factor only as regards a minority, and is responsible for the precise coloration of only a small minority, of adult birds and mammals; how much and what part it plays, and in what percentage of cases, in producing the coloration of eggs, is a subject which is well worth serious study. As regards most of these sea-birds which nest gregariously, their one instinct for safety at nesting-time seems to be to choose a lonely island. This is their only, and sufficient, method of outwitting their foes at the crucial period of their lives.

We found only eggs in the nurseries, not young birds. In each nursery there were always a number of terns

brooding their eggs, and the air above was filled with a ceaseless flutter and flashing of birds leaving their nests and returning to them—or eggs rather, for, speaking accurately, there were no nests. The sky above was alive with the graceful, long-winged things. As we approached the nurseries, the birds would begin to leave. If we halted before the alarm became universal, those that stayed always served as lures to bring back those that had left. If we came too near, the whole party rose in a tumult of flapping wings; and when all had thus left, it was some time before any returned. With patience it was quite possible to get close to the sitting birds; I noticed that in the heat many had their bills open. Those that were on the wing flew round and round us, creaking and bleating, and often so near that every detail of form and color was vivid in our eyes. The immense majority were royal terns, big birds with orange beaks. With them were a very few Caspian terns, still bigger and with bright-red beaks, and quite a number of Cabot's terns, smaller birds with yellow-tipped black beaks. These were all nesting together, in the same nurseries.

It has been said on excellent authority that terns can always be told from gulls because, whereas the latter carry their beaks horizontally, the terns carry their bills pointing downward, "like a mosquito." My own observations do not agree with this statement. When hovering over water where there are fish and while watching for their prey, terns point the bill downward, just as pelicans do in similar circumstances; just as gulls often do when they are seeking to spy food below them. But normally, on the great majority of the occasions when I saw them, the terns, like the gulls, carried the bill in the same plane as the body.

On another island we found a small colony of Forster's tern; and we saw sooty terns, and a few of the diminutive least terns. But I was much more surprised to find on, or rather over, one island a party of black terns. As these are inland birds, most of which at this season are breeding around the lakes of our Northwestern country, I was puzzled by their presence. Still more puzzling was it to come across a party of turnstones, with males in full, brightly varied nuptial dress; for turnstones during the breeding-season live north of the arctic circle, in the perpetual sunlight of the long polar day. On the other hand, a couple of big oyster-catchers seemed, and were, entirely in place; they are striking birds and attract attention at a great distance. We saw dainty Wilson's plover with their chicks, and also semipalmated sandpipers.

On the morning of the 12th we returned to Pass Christian. I was very glad to have seen this bird refuge. With care and protection the birds will increase and grow tamer and tamer, until it will be possible for any one to make trips among these reserves and refuges, and to see as much as we saw, at even closer quarters. No sight more beautiful and more interesting could be imagined.

I am far from disparaging the work of the collector who is also a field naturalist. On the contrary, I fully agree with Mr. Joseph Grinnell's recent plea for him. His work is indispensable. It is far more important to protect his rights than to protect those of the sportsman; for the serious work of the collector is necessary in order to prevent the scientific study of ornithology from lapsing into mere dilettanteism indulged in as a hobby by men and women with opera-glasses. Moreover, sportsmen also have their rights, and it is folly

to sacrifice these rights to mere sentimentality—for, of course, sentimentality is as much the antithesis and bane of healthy sentiment as bathos is of pathos. If thoroughly protected, any bird or mammal would speedily increase in numbers to such a degree as to drive man from the planet; and of recent years this has been signally proved by actual experience as regards certain creatures, notably as regards the wapiti in the Yellowstone (where the prime need now is to provide for the annual killing of at least five thousand), and to a less extent as regards deer in Vermont.

But as yet these cases are rare exceptions. As yet with the great majority of our most interesting and important wild birds and beasts the prime need is to protect them, not only by laws limiting the open season and the size of the individual bag, but especially by the creation of sanctuaries and refuges. And, while the work of the collector is still necessary, the work of the trained faunal naturalist, who is primarily an observer of the life histories of the wild things, is even more necessary. The progress made in the United States, of recent years, in creating and policing bird refuges,* has been of capital importance.

At nightfall of the third day of our trip, when we were within sight of Fort Jackson and of the brush and low trees which here grow alongside the Mississippi, we were joined by Mr. M. L. Alexander, the president of the Conservation Commission, on the commission's boat *Louisiana*. He was more than kind and courteous, as were all my Louisiana friends. He and Mr. Miller told me much of the work of the commission; work not only of the utmost use to Louisiana, but of almost equal

* See Appendix B.

consequence to the rest of the country, if only for the example set.

The commission was not founded until 1912, yet it has already accomplished a remarkable amount along many different lines. The work of reforestation of great stretches of denuded and at present worthless pine land has begun; work which will turn lumbering into a permanent Louisiana industry by making lumber a permanent crop asset, like corn or wheat, only taking longer to mature—an asset which it is equally important not to destroy. In taking care of the mineral resources a stop has been put to waste as foolish as it was criminal; for example, a gas-well which had flowed to waste until six million dollars' worth of gas had been lost was stopped and stored at the cost of five thousand one hundred dollars. The oysters are now farmed and husbanded, the beds being leased in such fashion that there is a steady improvement of the product. Louisiana is peculiarly rich in fish, and a policy has been inaugurated which, if persevered in, will make the paddle-fish industry as important as the sturgeon fishery is in Russia. Not only do the waters of Louisiana now belong to the State, but also the land under the water, this last proving in practice an admirable provision. Some three hundred thousand acres of game reserves and wild-life refuges (mostly uninhabitable by man) have now been established. These have largely been gifts to the State by wise and generous private individuals and corporations, the chief donors being Messrs. Edward A. McIlhenny and Charles Willis Ward, Mrs. Russell Sage, and the Rockefeller Foundation. The Conservation Commission has accepted the gifts, and is taking care of the reserves and refuges through its State wardens, with the result that

wild birds of many kinds, including even the wary geese, which come down as winter visitants by the hundred thousand, have become very tame, and many beautiful birds which were on the verge of extinction are now re-established and increasing in numbers. These reserves, which lie for the most part in the low country along the coast, are west of the Mississippi.

Job had just come from a visit to the private reserve of Edward A. McIlhenny on Avery Island. It is the most noteworthy reserve in the country. It includes four thousand acres, and is near the Ward-McIlhenny reserve, which they have given to the State—a king's gift! Avery Island is very beautiful. A great, shallow, artificial lake, surrounded by dwellings, fields, lawns, a railroad, and ox-wagon road, does not seem an ideal home for herons; but it has proved such under the care of Mr. McIlhenny. He started the reserve twenty years ago with eight snowy herons. Now it contains about forty thousand herons of several species. Complete freedom from molestation has rendered the birds extraordinarily tame. The beautiful snow-white lesser egret, which had been almost exterminated by the plume-hunters, flourishes by the thousand; the greater egret has been bothered so by the smaller one that it has retired before it; its heronries are now to be found mainly in other parts of the protected region. Many other kinds of heron, and many water-fowl, literally throng the place. Ducks winter by the thousand, and, most unexpectedly, some even of the northern kinds, like the gadwall, now stay to breed. Most of these birds are so tame that there is little difficulty in taking photographs of them.

The Audubon societies and all similar organizations are doing a great work for the future of our country.

BIRD RESERVES

Birds should be saved because of utilitarian reasons; and, moreover, they should be saved because of reasons unconnected with any return in dollars and cents. A grove of giant redwoods or sequoias should be kept just as we keep a great and beautiful cathedral. The extermination of the passenger-pigeon meant that mankind was just so much poorer; exactly as in the case of the destruction of the cathedral at Rheims. And to lose the chance to see frigate-birds soaring in circles above the storm, or a file of pelicans winging their way homeward across the crimson afterglow of the sunset, or a myriad terns flashing in the bright light of midday as they hover in a shifting maze above the beach—why, the loss is like the loss of a gallery of the masterpieces of the artists of old time.

XI

A CURIOUS EXPERIENCE WITH A MOOSE

In 1915 I spent a little over a fortnight on a private game reserve in the province of Quebec. I had expected to enjoy the great northern woods and the sight of beaver, moose, and caribou; but I had not expected any hunting experience worth mentioning. Nevertheless, toward the end of my trip, there befell me one of the most curious and interesting adventures with big game that has ever befallen me during the forty years since I first began to know the life of the wilderness.

In both Canada and the United States the theory and indeed the practice of preserving wild life on protected areas of land have made astonishing headway since the closing years of the nineteenth century. These protected areas, some of very large size, come in two classes. First, there are those which are public property, where the protection is given by the State. Secondly, there are those where the ownership and the protection are private.

By far the most important, of course, are the public preserves. These by their very existence afford a certain measure of the extent to which democratic government can justify itself. If in a given community unchecked popular rule means unlimited waste and destruction of the natural resources—soil, fertility, water-power, forests, game, wild life generally—which by right belong as much to subsequent generations as to the present generation, then it is sure proof that the present generation is not yet really fit for self-control,

that it is not yet really fit to exercise the high and responsible privilege of a rule which shall be both by the people and for the people. The term "for the people" must always include the people unborn as well as the people now alive, or the democratic ideal is not realized. The only way to secure the chance for hunting, for the enjoyment of vigorous field-sports, to the average man of small means, is to secure such enforced game-laws as will prevent anybody and everybody from killing game to a point which means its diminution and therefore ultimate extinction. Only in this way will the average man be able to secure for himself and his children the opportunity of occasionally spending his yearly holiday in that school of hardihood and self-reliance—the chase. New Brunswick, Maine, and Vermont during the last generation have waked up to this fact. Moose and deer in New Brunswick and Maine, deer in Vermont, are so much more plentiful than they were a generation ago that young men of sufficient address and skill can at small cost spend a holiday in the woods, or on the edge of the rough backwoods farm land, and be reasonably sure of a moose or a deer. To all three commonwealths the game is now a real asset because each moose or deer alive in the woods brings in, from the outside, men who spend among the inhabitants much more than the money value of the dead animal; and to the lover of nature the presence of these embodiments of the wild vigor of life adds immensely to the vast majesty of the forests.

In Canada there are many great national reserves; and much—by no means all—of the wilderness wherein shooting is allowed, is intelligently and faithfully protected, so that the game does not diminish. In the summer of 1915 we caught a glimpse of one of these

great reserves, that including the wonderful mountains on the line of the Canadian Pacific, from Banff to Lake Louise, and for many leagues around them. The naked or snow-clad peaks, the lakes, the glaciers, the evergreen forest shrouding the mountainsides and valleys, the clear brooks, the wealth of wild flowers, make up a landscape as lovely as it is varied. Here the game—bighorn and white goat-antelope, moose, wapiti, and blacktail deer and whitetail deer—flourish unmolested. The flora and fauna are boreal, but boreal in the sense that the Rocky Mountains are boreal as far south as Arizona; the crimson paint-brush that colors the hillsides, the water-ousel in the rapid torrents —these and most of the trees and flowers and birds suggest those of the mountains which are riven asunder by the profound gorges of the Colorado rather than those which dwell among the lower and more rounded Eastern hill masses from which the springs find their way into the rivers that flow down to the North Atlantic. Around these and similar great nurseries of game, the hunting is still good in places; although there has been a mistaken lenity shown in permitting the Indians to butcher mountain-sheep and deer to the point of local extermination, and although, as is probably inevitable in all new communities, the game laws are enforced chiefly at the expense of visiting sportsmen, rather than at the expense of the real enemies of the game, the professional meat and hide hunters who slaughter for the profit.

In Eastern Canada, as in the Eastern United States, there has been far less chance than in the West to create huge governmental game reserves. But there has been a positive increase of the big game during the last two or three decades. This is partly due to

the creation and enforcement of wise game-laws—although here also it must be admitted that in some of the Provinces, as in some of the States, the alien sportsman is judged with Rhadamanthine severity, while the home offenders, and even the home Indians, are but little interfered with. It would be well if in this matter other communities copied the excellent example of Maine and New Brunswick. In addition to the game-laws, a large part is played in Canadian game preservation by the hunting and fishing clubs. These clubs have policed, and now police, many thousands of square miles of wooded wilderness, worthless for agriculture; and in consequence of this policing the wild creatures of the wilderness have thriven, and in some cases have multiplied to an extraordinary degree, on these club lands.

In September, 1915, I visited the Tourilli Club, as the guest of an old friend, Doctor Alexander Lambert, a companion of previous hunting trips in the Louisiana cane-brakes, in the Rockies, on the plains bordering the Red River of the south, and among the Bad Lands through which the Little Missouri flows. The Tourilli Club is an association of Canadian and American sportsmen and lovers of the wilderness. The land, leased from the government by the club, lies northwest of the attractive Old World city of Quebec—the most distinctive city north of the Mexican border, now that the creole element in New Orleans has been almost swamped. The club holds about two hundred and fifty square miles along the main branches and the small tributaries of the Saint Anne River, just north of the line that separates the last bleak farming land from the forest. It is a hilly, almost mountainous, region studded with numerous lakes, threaded by

rapid, brawling brooks, and covered with an unbroken forest growth of spruce, balsam, birch, and maple.

On the evening of the day I left Quebec I camped in a neat log cabin by the edge of a little lake. I had come in on foot over a rough forest trail with my two guides or porters. They were strapping, good-humored French-Canadians, self-respecting and courteous, whose attitude toward their employer was so much like that of Old World guides as to be rather interesting to a man accustomed to the absolute and unconscious democracy of the Western cow camps and hunting trails. One vital fact impressed me in connection with them as in connection with my Spanish-speaking and Portuguese-speaking friends in South America. They were always fathers of big families as well as sons of parents with big families; the big family was normal to their kind, just as it was normal among the men and women I met in Brazil, Argentina, Chile, Uruguay, and Paraguay, to a degree far surpassing what is true of native Americans, Australians, and English-speaking Canadians. If the tendencies thus made evident continue to work unchanged, the end of the twentieth century will witness a reversal in the present positions of relative dominance, in the new and newest worlds, held respectively by the people who speak English and the people who speak the three Latin tongues. Darwin, in the account of his famous voyage, in speaking of the backwardness of the countries bordering the Plate River, dwells on the way they lag behind, in population and material development, compared to the English settlers in Australia and North America. Were he alive now, the development of the countries around Buenos Ayres and Montevideo would make him revise his judgment.

And, whatever may be the case in the future, so far this material development has not, as in the English-speaking world and in old France, been accompanied by a moral change which threatens complete loss of race supremacy because of sheer dwindling in the birth-rate. The men and women of Quebec, Brazil, and Argentina are still primarily fathers and mothers; and unless this is true of a race it neither can nor ought to permanently prosper. The atrophy of the healthy sexual instinct is in its effects equally destructive whether it be due to licentiousness, asceticism, coldness, or timidity; whether it be due to calculated self-indulgence, love of ease and comfort, or absorption in worldly success on the part of the man, or, on the part of the woman, to that kind of shrieking "feminism," the antithesis of all worth calling womanly, which gives fine names to shirking of duty, and to the fear of danger and discomfort, and actually exalts as praiseworthy the abandonment or subordination by women of the most sacred and vitally important of the functions of womanhood. It is not enough that a race shall be composed of good fighters, good workers, and good breeders; but, unless the qualities thus indicated are present in the race foundation, then the superstructure, however seemingly imposing, will topple. As I watched my French guides prepare supper I felt that they offered fine stuff out of which to make a nation.

Beside the lake an eagle-owl was hooting from the depths of the spruce forest: hoohoo—h-o-o-o—hoohoo. From the lake itself a loon, floating high on the water, greeted me with eerie laughter. A sweetheart-sparrow sang a few plaintive bars among the alders. I felt as if again among old friends.

Next day we tramped to the comfortable camp of

the president of the club, Mr. Glen Ford McKinney. Half-way there Lambert met me; and for most of the distance he, or one of the guides, carried a canoe, as the route consisted of lakes connected by portages sometimes a couple of miles long. When we reached the roomy, comfortable log houses on Lake McKinney, at nightfall, we were quite ready for our supper of delicious moose venison. Lambert, while fishing in his canoe, a couple of days previously, had killed a young bull as it stood feeding in a lake, and for some days moose meat was our staple food. After that it was replaced by messes of freshly caught trout, and once or twice by a birch partridge. Mrs. Lambert was at the camp, and Mr. and Mrs. McKinney joined us there. A club reserve such as this, with weather-proof cabins scattered here and there beside the lakes, offers the chance for women of the outdoors type, no less than for men no longer in their first youth, to enjoy the life of the wonderful northern wilderness, and yet to enjoy also such substantial comforts as warmth, dry clothes, and good food at night, after a hard day in the open.

Such a reserve offers a fine field for observation of the life histories of the more shy and rare wild creatures practically unaffected by man. Many persons do not realize how completely on these reserves the wild life is led under natural conditions, wholly unlike those on small artificial reserves. Most wild beasts in the true wilderness lead lives that are artificial in so far as they are primarily conditioned by fear of man. In wilderness reserves like this, on the contrary, there is so much less dread of human persecution that the lives led by such beasts as the moose, caribou, and beaver more closely resemble life in the woods before the

appearance of man. As an example, on the Tourilli game reserve, wolves, which did not appear until within a decade, have been much more destructive since then than men, and have more profoundly influenced for evil the lives of the other wild creatures.

The beavers are among the most interesting of all woodland beasts. They had been so trapped out that fifteen years ago there were probably not a dozen individuals left on the reserve. Then they were rigidly protected. After ten years they had increased literally a hundredfold. At the end of that time trapping was permitted for a year; hundreds of skins were taken, and then trapping was again prohibited.

The beaver on the reserve at present number between one and two thousand. We saw their houses and dams everywhere. One dam was six feet high; another dam was built to the height of about a foot and a half, near one of our camping-places, in a week's time. The architects were a family of beavers; some of the branches bore the big marks of the teeth of the parent beavers, some the marks of the small teeth of the young ones. It was interesting to see the dams grow, stones being heaped on the upcurrent side to keep the branches in place. Frequently we came across the animals themselves, swimming a stream or lake, and not much bothered by our presence. When left unmolested they are quite as much diurnal as nocturnal. Again and again as I sat hidden on the lake banks, beaver swam to and fro close beside me, even at high noon. One, which was swimming across a lake at sunset, would not dive until we paddled the canoe straight for it as hard as we could; whereupon it finally disappeared with a slap of its tail. Once at evening Lambert pulled his canoe across the approach to a house,

barring the way to the owner—a very big beaver. It did not like to dive under the canoe, and swam close up on the surface, literally gritting its teeth, and now and then it would slap the water with its tail, whereupon the heads of other beaver would pop up above the waters of the lake.

By damming the outlets of some of the lakes and killing the trees and young stuff around the edges, the beaver on this reserve had destroyed some of the favorite haunts of the moose. We saw the old and new houses on the shores of the lakes and beside the streams; some of them were very large, taller than a man and twice as much across. Some of the old dams, at the pond outlets and across the streams, had become firm causeways, grown up with trees. The beaver is a fecund animal, its habits are such that few of the beasts of ravin can kill it more than occasionally, and when not too murderously persecuted by man it increases with extraordinary rapidity.

This is primarily due to the character of its food. The forest trees themselves furnish what it eats. This means that its food-supply is practically limitless. It has very few food rivals. The trunks of full-grown trees offer what is edible to a most narrowly limited number of vertebrates, and therefore—a fact often lost sight of—until man appears on the scene forests do not support anything like the same number and variety of large beasts as open, grassy plains. There are tree-browsing creatures, but these can only get at the young growth; the great majority of beasts prefer prairies or open scrub to thick forest. The open plains of central North America were thronged with big game to a degree that was never true of the vast American forests, whether subarctic, temperate, or tropical. The

great game regions of Africa were the endless dry plains of South and East Africa, and not the steaming West African forests. There are, of course, some big mammals that live exclusively on low plants and bushes that only grow in the forest, and some trees at certain seasons yield fruits and nuts which fall to the ground; but, speaking generally, an ordinary full-grown tree of average size yields food only to beasts of exceptional type, of which the most conspicuous in North America are the tree-porcupine and the beaver. Even these eat only the bark; no vertebrate, so far as I know, eats the actual wood of the trunk.

These bark-eaters, therefore, have almost no food rivals, and the forest furnishes them food in limitless quantities. The beaver has developed habits more interesting and extraordinary than those of any other rodent—indeed as interesting as those of any other beast—and its ways of life are such as to enable it to protect itself from its enemies, and to insure itself against failure of food, to a degree very unusual among animals. It is no wonder that, when protected against man, it literally swarms in its native forests. Its dams, houses, and canals are all wonderful, and on the Tourilli they were easily studied. The height at which many of the tree trunks had been severed showed that the cutting must have been done in winter when the snow was deep and crusted. One tree which had not fallen showed a deep spiral groove going twice round the trunk. Evidently the snow had melted faster than the beavers worked; they were never able to make a complete ring, although they had gnawed twice around the tree, and finally the rising temperature beat the teeth, and the task was perforce abandoned.

I was surprised at the complete absence from the

Tourilli of the other northern tree-eater—bark-eater—the porcupine. Inquiry developed the fact that porcupines had been exceedingly numerous until within a score of years or less. Then a mysterious disease smote the slow, clumsy, sluggish creatures, and in the course of two or three years they were absolutely exterminated. In similar fashion from some mysterious disease (or aggregation of diseases, which sometimes all work with virulence when animals become too crowded) almost all the rabbits in the reserve died off some six years ago. In each case it was a universally, or well-nigh universally, fatal epidemic, following a period during which the smitten animals had possessed good health and had flourished and increased greatly in spite of the flesh-eaters that preyed on them. In some vital details the cases differed. Hares, compared to porcupines, are far more prolific, far more active, and with far more numerous foes; and they also seem to be much more liable to these epidemics, although this may be merely because they so much more quickly increase to the point that seems to invite the disease. The porcupines are rather unsocial, and are so lethargic in their movements that the infection took longer to do its full work. But this work was done so thoroughly that evidently the entire race of porcupines over a large tract of country was exterminated. Porcupines have few foes that habitually prey on them, although it is said that there is an exception in the shape of the pekan —the big, savage sable, inappropriately called fisher by the English-speaking woodsmen. But they breed so slowly (for rodents) and move about so little that when exterminated from a district many years elapse before they again begin to spread throughout it. The rabbits, on the contrary, move about so much that infectious

diseases spread with extraordinary rapidity and they are the habitual food of every fair-sized bird and beast of prey, but their extraordinary fecundity enables them rapidly to recover lost ground. As regards these northern wood-rabbits and doubtless other species of hares, it is evident that their beast and bird foes, who prey so freely on their helplessness, nevertheless are incompetent to restrain the overdevelopment of the species. Their real foes, their only real foes, are the minute organisms that produce the diseases which at intervals sweep off their swarming numbers. The devastation of these diseases, whether the agents spreading them are insects or still smaller, microscopic creatures, is clearly proved in the case of these North American rabbits and porcupines; probably it explains the temporary and local extermination of the Labrador meadow-mice after they have risen to the culminating crest of one of those "waves of life" described by Doctor Cabot. It has ravaged among big African ruminants on an even more extensive scale than among these North American rodents. Doubtless such disease-devastation has been responsible for the extinction of many, many species in the past; and where for any cause species and individuals became crowded together, or there was an increase in moisture and a change in temperature, so that the insect carriers of disease became more numerous, the extinction might easily befall more than one species.

Of course such epidemic disease is only one of many causes that may produce such extermination or reduction in numbers. More efficient food rivals may be a factor; just as sheep drive out cattle from the same pasturage, and as, in Australia, rabbits drive out sheep. Or animal foes may be a cause. Fifteen years ago, in

the Tourilli, caribou were far more plentiful than moose. Moose have steadily increased in numbers. But some seven years ago wolves, of which none had been seen in these woods for half a century, made their appearance. They did not seriously molest the full-grown moose (nor the black bears), although they occasionally killed moose calves, and very rarely, when in a pack, an adult, but they warred on all the other animals, including the lucivees when they could catch them on the ice in winter. They followed the caribou unceasingly, killing many, and in consequence the caribou are now far less common. Barthelmy Lirette, the most experienced hunter and best observer among the guides—even better than his brother Arthur—told me that the wolves usually made no effort to assail the moose, and that never but once had he heard of their killing a grown moose. But they followed any caribou they came across, big or little. Once on snowshoes he had tracked such a chase all day long. A single wolf had followed a caribou for twenty-five miles before killing it. Evidently the wolf deliberately set about tiring his victim so that it could not resist. In the snow the caribou sank deep. The wolf ran lightly. His tracks showed that he had galloped whenever the caribou had galloped, and walked behind it when it became too tired to run, and then galloped again when under the terror of his approach the hunted thing once more flailed its fading strength into flight. Its strength was utterly gone when its grim follower at last sprang on it and tore out its life.

An arctic explorer once told me that on a part of the eastern coast of Greenland he found on one visit plenty of caribou and arctic foxes. A few years later

he returned. Musk-oxen had just come into the district, and wolves followed them. The musk-ox is helpless in the presence of human hunters, much more helpless than caribou, and can exist only in the appalling solitudes where even arctic man cannot live; but against wolves, its only other foes, its habits of gregarious and truculent self-defense enable it to hold its own as the caribou cannot. The wolves which were hangers-on of the musk-ox herds speedily killed or drove out both the foxes and the caribou on this stretch of Greenland coast, and as a result two once-plentiful species were completely replaced by two other species, which change also doubtless resulted in other changes in the smaller wild life.

Here we can explain the reason for the change as regards three of the animals, inasmuch as this change was ultimately conditioned by the movements of the fourth, the musk-ox. But we know nothing of the cause which produced the musk-ox migration, which migration resulted in such unsettling of life conditions for the wolves, caribous, and foxes of this one locality. Neither can we with our present knowledge explain the causes which in Maine and New Brunswick during the last thirty or forty years have brought about a diminution of the caribou, although there has been an increase in the number of moose and deer; wolves cannot have produced this change, for they kill the deer easier than the caribou. Field naturalists have in such questions an ample opportunity for work of the utmost interest. Doubtless they can in the future give us complete or partial explanations of many of these problems which are at present insoluble. In any event these continuous shiftings of faunas at the present day enable us to form some idea of the changes which must have oc-

curred on innumerable occasions during man's history on this planet. Beyond question many of the faunas which seem to us contemporary when their remains are found associated with those of prehistoric man were really successive and may have alternated again and again before one or both finally disappeared. Life is rarely static, rarely in a state of stable equilibrium. Often it is in a condition of unstable equilibrium, with continual oscillations one way and the other. More often still, while there are many shifts to and fro, the general tendency of change is with slow steadiness in one direction.

After a few days the Lamberts and I shifted to Lambert's home camp; an easy two days' journey, tramping along the portage trails and paddling across the many lakes. It was a very comfortable camp, by a beautiful lake. There were four log cabins, each water-tight and with a stove; and the largest was in effect a sitting-room, with comfortable chairs and shelves of books. They stood in a sunny clearing. The wet, dense forest was all around, the deep mossy ground spangled with bright-red partridge-berries. Behind the cabins was a small potato-patch. Wild raspberries were always encroaching on this patch, and attracted the birds of the neighborhood, including hermit and olive-back thrushes, both now silent. Chickadees were in the woods, and woodpeckers—the arctic, the hairy, and the big log-cock—drummed on the dead trees. One mid-afternoon a great gray owl called repeatedly, uttering a short, loud sound like that of some big wild beast. In front of the main cabin were four graceful mountain ashes, brilliant with scarlet berry clusters. On a neighboring lake Coleman Drayton had a camp; the view from it across the lake was very beautiful. He killed a moose

on the lake next to his and came over to dinner with us the same evening.

On the way to Lambert's camp I went off by myself for twenty-four hours, with my two guides, Arthur Lirette, one of the game-wardens of the club, and Odilon Genest. Arthur was an experienced woodsman, intelligent and responsible, and with the really charming manners that are so much more common among men of French or Spanish blood than among ourselves. Odilon was a strong young fellow, a good paddler and willing worker. I wished to visit a lake which moose were said to frequent. We carried our canoe thither.

After circling the lake in the canoe without seeing anything, we drew it ashore among some bushes and sat down under a clump of big spruces to watch. Although only partially concealed, we were quiet; and it is movement that attracts the eyes of wild things. A beaver house was near by and the inmates swam about not thirty feet from us; and scaup-ducks and once a grown brood of dusky mallard drifted and swam by only a little farther off. The beaver kept slapping the water with their broad trowel-tails, evidently in play; where they are wary they often dive without slapping the water. No bull appeared, but a cow moose with two calves came down to the lake, directly opposite us, at one in the afternoon and spent two hours in the water. Near where the three of them entered the lake was a bed of tall, coarse reed-grass standing well above the water. Earlier in the season this had been grazed by moose, but these three did not touch it. The cow, having entered the water, did not leave. She fed exclusively with her head under water. Wading out until only the ridge of her back was above the surface, and at times finding that the mud bothered even her long

legs, she plunged her huge, homely head to the bottom, coming up with between her jaws big tufts of dripping bottom-grass—the moose grass—or the roots and stems of other plants. After a time she decided to change her station, and, striking off into deep water, she swam half a mile farther down the lake. She swam well and powerfully, but sunk rather deep in the water, only her head and the ridge of her withers above it. She continued to feed, usually broadside to me, some three hundred and fifty yards off; her big ears flopped forward and back, and her long snout, with the protuberant nostrils, was thrust out as she turned from time to time to look or smell for her calves. The latter had separated at once from the mother, and spent only a little time in the water, appearing and disappearing among the alders, and among the berry bushes on a yielding bog of pink and gray moss. Once they played together for a moment, and then one of them cantered off for a few rods.

When moose calves go at speed they usually canter. By the time they are yearlings, however, they have adopted the trot as their usual gait. When grown they walk, trot when at speed, and sometimes pace; but they gallop so rarely that many good observers say that they never gallop or canter. This is too sweeping, however. I have myself, as will be related, seen a heavy old bull gallop for fifty yards when excited, and I have seen the tracks where a full-grown cow or young bull galloped for a longer distance. Lambert came on one close up in a shallow lake, and in its fright it galloped ashore, churning through the mud and water. In very deep snow one will sometimes gallop or bound for a dozen leaps, and under sudden fright from an enemy near by even the biggest moose will

sometimes break into a gallop which may last for several rods. More often, even under such circumstances, the animal trots off; and the trot is its habitual, and, save in exceptional circumstances, its only, rapid gait, even when charging.

As the cow and her young ones stood in the water or on the bank it was impossible not to be struck by the conspicuously advertising character of the coloration. The moose is one of the few animals of which the body is inversely countershaded, being black save for the brownish or grayish of the back. The huge black mass at once attracts the eye, and the whitish or grayish legs are also strikingly visible. The bright-red summer coat of the whitetail deer is, if anything, of even more advertising quality; but the huge bulk of a moose, added to its blackness, makes it the most conspicuous of all our beasts.

Moose are naturally just as much diurnal as nocturnal. We found them visiting the lakes at every hour of the day. They are so fond of water as to be almost amphibious. In the winter they feed on the buds and twig tips of young spruce and birch and swamp-maple; and when there is no snow they feed freely on various ground plants in the forest; but for over half the year they prefer to eat the grasses and other plants which grow either above or under the water in the lakes. They easily wade through mud not more than four feet deep, and take delight in swimming. But until this trip I did not know that moose, while swimming, dived to get grass from the bottom. Mr. McKinney told me of having seen this feat himself. The moose was swimming to and fro in a small lake. He plunged his head beneath water, and then at once raised it, looking around, evidently to see if any enemy were taking ad-

vantage of his head being concealed to approach him. Then he plunged his head down again, threw his rump above water, and dived completely below the surface, coming up with tufts of bottom-grass in his mouth. He repeated this several times, once staying down and out of sight for nearly half a minute.

After the cow moose left the water she spent an hour close to the bank, near the inlet. We came quite near to her in the canoe before she fled; her calves were farther in the woods. It was late when we started to make our last portage; a heavy rain-storm beat on us, speedily drenching us, and the darkness and the driving downpour made our walk over the rough forest trail one of no small difficulty. Next day we went to Lambert's camp.

Some ten miles northeast of Lambert's camp lies a stretch of wild and mountainous country containing many lakes, which has been but seldom visited. A good cabin has been built on one of the lakes. A couple of years ago Lambert went thither, but saw nothing, and Coleman Drayton was there the same summer; Arthur, my guide, visited the cabin last spring to see if it was in repair; otherwise the country had been wholly undisturbed. I determined to make a three days' trip to it, with Arthur and Odilon. We were out of meat and I desired to shoot something for the table. My license permitted me to kill one bull moose. It also permitted me to kill two caribou of either sex; but Lambert felt, and I heartily agreed with him, that no cow ought to be shot.

We left after breakfast one morning. Before we had been gone twenty-five minutes I was able to obtain the wished-for fresh meat. Our course, as usual, lay along a succession of lakes connected by carries, or

portages. We were almost at the end of the first portage when we caught a glimpse of a caribou feeding in the thick woods some fifty yards to the right of our trail. It was eating the streamers of gray-green moss which hung from the dead lower branches of the spruces. It was a yearling bull. At first I could merely make out a small patch of its flank between two tree trunks, and I missed it—fortunately, for, if wounded, it would probably have escaped. At the report, instead of running, the foolish young bull shifted his position to look at us; and with the next shot I killed him. While Arthur dressed him, Odilon returned to camp and brought out a couple of men. We took a shoulder with us for our provision and sent the rest back to camp. Hour after hour we went forward. We paddled across the lakes. Between them the trails sometimes led up to and down from high divides; at other times they followed the courses of rapid brooks which brawled over smooth stones under the swaying, bending branches of the alders. Off the trail fallen logs and boulders covered the ground, and the moss covered everything ankle-deep or knee-deep.

Early in the afternoon we reached the cabin. The lake, like most of the lakes thereabouts, was surrounded by low, steep mountains, shrouded in unbroken forest. The light-green domes of the birches rose among the sombre spruce spires; on the mountain crests the pointed spruces made a serrated line against the sky. Arthur and I paddled off across the lake in the light canoe we had been carrying. We had hardly shoved off from shore before we saw a caribou swimming in the middle of the lake. It was a young cow, and doubtless had never before seen a man. The canoe much excited its curiosity. A caribou, thanks probably to its pecu-

liar pelage, is a very buoyant swimmer. Unlike the moose, this caribou had its whole back, and especially its rump, well out of water; the short tail was held erect, and the white under-surface glinted whenever the swimmer turned away from us. At first, however, it did not swim away, being too much absorbed in the spectacle of the canoe. It kept gazing toward us with its ears thrown forward, wheeling to look at us as lightly and readily as a duck. We passed it at a distance of some seventy-five yards, whereupon it took fright and made off, leaving a wake like a paddle-wheel steamer and, when it landed, bouncing up the bank with a great splashing of water and cracking of bushes. A caribou swims even better than a moose, but whereas a moose not only feeds by preference in the water, but half the time has its head under water, the caribou feeds on land, although occasionally cropping water-grass that stands above the surface.

We portaged beside a swampy little stream to the next lake and circled it in the canoe. Silently we went round every point, alert to find what the bay beyond might hold. But we saw nothing; it was night when we returned. As we paddled across the lake the stars were glorious overhead and the mysterious landscape shimmered in the white radiance of the moonlight. Loons called to one another, not only uttering their goblin laughter, but also those long-drawn, wailing cries which seem to hold all the fierce and mournful loneliness of the northern wastes. Then we reached camp, and feasted on caribou venison, and slept soundly on our beds of fragrant balsam boughs.

Next morning, on September 19, we started eastward, across a short portage, perhaps a quarter of a mile long, beside which ran a stream, a little shallow

river. At the farther end of the portage we launched the canoe in a large lake hemmed in by mountains. The lake twisted and turned, and was indented by many bays. A strong breeze was blowing. Arthur was steersman, Odilon bowman, while I sat in the middle with my Springfield rifle. We skirted the shores, examining each bay.

Half an hour after starting, as we rounded a point, we saw the huge black body and white shovel antlers of a bull moose. He was close to the alders, wading in the shallow water and deep mud and grazing on a patch of fairly tall water-grass. So absorbed was he that he did not notice us until Arthur had skilfully brought the canoe to within eighty yards of him. Then he saw us, tossed his great antlered head aloft, and for a moment stared at us, a picture of burly majesty. He stood broadside on, and a splendid creature he was, of towering stature, the lord of all the deer tribe, as stately a beast of the chase as walks the round world.

The waves were high, and the canoe danced so on the ripple that my first bullet went wild, but with the second I slew the mighty bull.

We had our work cut out to get the bull out of the mud and on the edge of the dry land. The antlers spread fifty-two inches. Some hours were spent in fixing the head, taking off the hide, and cutting up the carcass. Our canoe was loaded to its full capacity with moose meat when we started toward the beginning of the portage leading from the southeastern corner of the lake toward the Lamberts' camp. Here we landed the meat, putting cool moss over it, and left it to be called for on our way back, on the morrow.

It was shortly after three when we again pushed off in the canoe, and headed for the western end of the

lake, for the landing from which the portage led to our cabin. It had been a red-letter day, of the ordinary hunting red-letter type. I had no conception that the real adventure still lay in front of us.

When half a mile from the landing we saw another big bull moose on the edge of the shore ahead of us. It looked and was—if anything—even bigger-bodied than the one I had shot in the morning, with antlers almost as large and rather more palmated. We paddled up to within a hundred yards of it, laughing and talking, and remarking how eager we would have been if we had not already got our moose. At first it did not seem to notice us. Then it looked at us, but paid us no further heed. We were rather surprised at this but paddled on past it, and it then walked along the shore after us. We still supposed that it did not realize what we were. But another hundred yards put us to windward of it. Instead of turning into the forest when it got our wind, it merely bristled up the hair on its withers, shook its head, and continued to walk after the canoe, along the shore. I had heard of bull moose, during the rut, attacking men unprovoked, if the men were close up, but never of anything as wanton and deliberate as this action, and I could hardly believe the moose meant mischief, but Arthur said it did; and obviously we could not land with the big, evil-looking beast coming for us—and, of course, I was most anxious not to have to shoot it. So we turned the canoe round and paddled on our back track. But the moose promptly turned and followed us along the shore. We yelled at him, and Odilon struck the canoe with his paddle, but with no effect. After going a few hundred yards we again turned and resumed our former course; and as promptly the moose turned and

followed us, shaking his head and threatening us. He seemed to be getting more angry, and evidently meant mischief. We now continued our course until we were opposite the portage landing, and about a hundred yards away from it; the water was shallow and we did not wish to venture closer, lest the moose might catch us if he charged. When he came to the portage trail he turned up it, sniffing at our footsteps of the morning, and walked along it into the woods; and we hoped that now he would become uneasy and go off. After waiting a few minutes we paddled slowly toward the landing, but before reaching it we caught his loom in the shadow, as he stood facing us some distance down the trail. As soon as we stopped he rushed down the trail toward us, coming in to the lake; and we backed hastily into deep water. He vented his rage on a small tree, which he wrecked with his antlers. We continued to paddle round the head of the bay, and he followed us; we still hoped we might get him away from the portage, and that he would go into the woods. But when we turned he followed us back, and thus went to and fro with us. Where the water was deep near shore we pushed the canoe close in to him, and he promptly rushed down to the water's edge, shaking his head, and striking the earth with his fore hoofs. We shouted at him, but with no effect. As he paraded along the shore he opened his mouth, lolling out his tongue; and now and then when he faced us he ran out his tongue and licked the end of his muzzle with it. Once, with head down, he bounded or galloped round in a half-circle; and from time to time he grunted or uttered a low, menacing roar. Altogether the huge black beast looked like a formidable customer, and was evidently in a most evil rage and bent on man-killing.

For over an hour he thus kept us from the shore, running to meet us wherever we tried to go. The afternoon was waning, a cold wind began to blow, shifting as it blew. He was not a pleasant-looking beast to meet in the woods in the dusk. We were at our wits' ends what to do. At last he turned, shook his head, and with a flourish of his heels galloped—not trotted—for fifty yards up beside the little river which paralleled the portage trail. I called Arthur's attention to this, as he had been telling me that a big bull never galloped. Then the moose disappeared at a trot round the bend. We waited a few minutes, cautiously landed, and started along the trail, watching to see if the bull was lying in wait for us; Arthur telling me that if he now attacked us I must shoot him at once or he would kill somebody.

A couple of hundred yards on, the trail led within a few yards of the little river. As we reached this point a smashing in the brush beyond the opposite bank caused us to wheel; and the great bull came headlong for us, while Arthur called to me to shoot. With a last hope of frightening him I fired over his head, without the slightest effect. At a slashing trot he crossed the river, shaking his head, his ears back, the hair on his withers bristling. "Tirez, m'sieu, tirez; vite, vite!" called Arthur, and when the bull was not thirty feet off I put a bullet into his chest, in the sticking-point. It was a mortal wound, and stopped him short; I fired into his chest again, and this wound, too, would by itself have been fatal. He turned and recrossed the stream, falling to a third shot, but as we approached he struggled to his feet, grunting savagely, and I killed him as he came toward us.

I was sorry to have to kill him, but there was no

alternative. As it was, I only stopped him in the nick of time, and had I not shot straight, at least one of us would have paid forfeit with his life in another second. Even in Africa I have never known anything but a rogue elephant or buffalo, or an occasional rhinoceros, to attack so viciously or with such premeditation when itself neither wounded nor threatened.

Gentle-voiced Arthur, in his delightful habitant's French, said that the incident was "pas mal curieux." He used "pas mal" as a superlative. The first time he used it I was completely bewildered. It was hot and sultry, and Arthur remarked that the day was "pas mal mort." How the day could be "not badly dead" I could not imagine, but the proper translation turned out to be "a very lifeless day," which was true.

On reaching Lambert's camp, Arthur and Odilon made affidavit to the facts as above set forth, and this affidavit I submitted to the secretary of mines and fisheries of Quebec, who approved what I had done.

On the day following that on which we killed the two bulls we went back to Lambert's home camp. While crossing one lake, about the middle of the forenoon, a bull moose challenged twice from the forest-clad mountain on our right. We found a pawing-place, a pit where one—possibly more than one—bull had pawed up the earth and thrashed the saplings round about with its antlers. The place smelled strongly of urine. The whole of the next day was spent in getting in the meat, skins, and antlers.

I do not believe that this vicious bull moose had ever seen a man. I have never heard of another moose acting with the same determination and perseverance in ferocious malice; it behaved, as I have said, like some of the rare vicious rogues among African ele-

phants, buffaloes, and rhinoceroses. Bull moose during the rut are fierce animals, however, and, although there is ordinarily no danger whatever in shooting them, several of my friends have been resolutely charged by wounded moose, and I know of and have elsewhere described one authentic case where the hunter was killed. A boy carrying mail through the woods to the camp of a friend of mine was forced to climb a tree by a bull which threatened him. My friend Pride, of Island Falls, Maine, was charged while in a canoe at night by a bull moose which he had incautiously approached too near, and the canoe was upset. If followed on snow-shoes in the deep snow, or too closely approached in its winter yard, it is not uncommon for a moose to charge when its pursuer is within a few yards. Once Arthur was charged by a bull which was in company with a cow. He was in a canoe, at dusk, in a stream, and the bull rushed into the water after him, while he paddled hard to get away; but the cow left, and the bull promptly followed her. In none of these cases, however, did the bull act with the malice and cold-blooded purposefulness shown by the bull I was forced to kill.

Two or three days later I left the woods. The weather had grown colder. The loons had begun to gather on the larger lakes in preparation for their southward flight. The nights were frosty. Fall was in the air. Once there was a flurry of snow. Birch and maple were donning the bravery with which they greet the oncoming north; crimson and gold their banners flaunted in the eyes of the dying year.

XII

A NATURALISTS' TROPICAL LABORATORY

Our zoological knowledge of the tropics, especially so far as concerns the higher vertebrates and the more prominent and interesting forms of invertebrate life, is now fairly complete in its larger outlines. The collector has still his part to play here and there—a necessary and important but by itself far from the highest part—and here and there desultory roaming or more systematic and extended exploration will still yield zoological results of prime consequence. But what is now especially needed is restricted intensive observation in carefully selected tropical stations, where the teeming animal life can be studied fully and at leisure. The student should be a scientist whose training is both broad and specialized. Unless he has breadth of outlook—such as Humboldt, as Cuvier, as Darwin possessed—he cannot reach the higher levels of his calling, where power of sound generalization, of controlled imagination, and of cautious work along lines of daring hypothesis are indispensable. Yet unless he also possesses the power of sustained, long-continued, highly specialized, and minutely accurate observation his generalizations and hypotheses will be either worthless or mischievous. He must be equally at home in the field and in the study. He must possess the unflagging, unwearying, patient industry of the scientific man who loves science with whole-hearted ardor. He must be able to see, and to understand what he sees;

to interpret what he has seen in the light of wide knowledge; and finally to record it with comprehensive vividness and charm no less than with accurate fidelity to fact. A high ideal! and impossible of entire realization. But it can be measurably realized. Demerara is one of the tropical lands where there is a teeming life to be studied; and Mr. William Beebe is one of the scientific men who can study it as it ought to be studied.

The New York Zoological Society, thanks to the far-sightedness of some and the generosity of others of its members, has established a tropical-research station in Demerara, and has placed Beebe in charge of it. In late February, 1916, I was able to visit this station. While doing so I stayed at the house of Mr. Withers, as I shall describe in the next article.

Beebe's laboratory was half a mile distant from the Withers house. It likewise was on a hilltop, with a steep path leading down to the landing-place for the boats in a bay of the river. Across the river were the buildings of the penal settlement. The house had formerly belonged to a man who was a famous old fellow in his day—a white man who led a life more than half savage—a kind of life well known to all wild communities on the shifting frontier between untamed barbarism and the almost equally wild and untrammelled vigor of the first pioneers of the rude, oncoming civilization. He had lived with the Indians as protector and tyrant; he was as hardy and as well versed in woodcraft as Carib or Arrawack; he dominated them, and was thereby enabled to render useful service to the colonial government. He had finally come to live definitely with his own people, and had built the house in question. When he died it came into the possession of Withers, who most generously gave it

to Beebe for use as the laboratory—a gift for which science is much indebted. The house stood on high brick and stone piers, so that the lower story was a skeleton, with shelters in which goods were stored. A wooden staircase led to the floor above. On this floor the front was occupied by one big, open compartment, which could be called either room or veranda. The naturalists used this as workshop, living-room, and dining-room, and the other half of the floor was occupied by the bedrooms. The cabins of the coolies and negroes were not far off. There were Indian attendants also, most of them bearing the names of saints or prophets. They lived in open huts, and served as hunters; and they were kept on the watch for rare specimens. There was good bathing in the river; but there was need of some caution, for, although caymans were rare at this spot, there was an occasional electric eel, and Carib fish were sufficiently common to make watchfulness advisable.

In this big, roomy, airy house at Kalacoon, near where the Mazaruni River empties into the Essequibo, Beebe had found just the spot for his tropical-research station. He had with him as associates and assistants Inness Hartley and Paul Howes. Nor was this all. Hartley's sister, Miss Hartley, and her friend Miss Taylor, of South Carolina, were with them, and were just as eager and enthusiastic as the men; their work was to draw and paint animals and plants from life and immediately after death—for many creatures which when living have naked skins, or scales or feathers, with beautiful metallic lustres, lose these hues almost immediately after death. People who are fortunate enough to be devoted to their work for its own sake and to find in it an absorbing pleasure, are

to be congratulated; and this little party of naturalists —the old-fashioned word seems a little less pedantic than "biologists"—were enjoying the rare combination of working hard at a task in which their souls delighted, and of also taking part in a thrilling kind of picnic. All were in high spirits, bound to enjoy everything, and bound to make the experiment a success. Each had his or her particular branch of labor, and there was in addition the agreeable diversion of finding out, for example, what they would get for dinner or whether they would have any dinner at all.

Opportunities for study lay not only at their very doors but within them! One day when I lunched with them two palm-tanagers kept entering through the windows to catch spiders; and when one of the birds dropped a spider Beebe carefully preserved it as a sample of their diet. As we sat at lunch, through the unglazed window we saw in the top of a palm, only a few yards away, the nests of palm-tanagers and moriche orioles. The birds were nesting, and were flitting in and out. In the same tree-top were perched gray-headed king-birds, and the noisy ques-que-dit, all on friendly terms. After nightfall bats flitted through the rooms, and my zealous friends were gravely discussing whether it would be possible for one of them, by leaving one foot exposed as bait, to get a flash-light picture of a vampire sucking blood. This plan was rejected as impracticable. But while I was in their neighborhood they passed one evening of agreeable diversity. Four of them were hard at work around the lamp in the large, open, dark room, sketching, making records of the day's observations and results, and giving the last touches to the specimens collected; while the fifth, who was a crack shot, lay in a

reclining-chair, almost on his back, and from time to time shot at some overhead bat which he hoped was a vampire. This sporting proceeding in no way disturbed the students of either sex on the evening in question; by the way, only one of the sacrificed bats proved to be a vampire.

All kinds of beasts abounded in the neighborhood. One of the commonest was a small opossum. The female had from eight to a dozen young, which she carried on her back even when they were so well grown that their aggregate weight was over double what she herself weighed. As for the birds, their name was legion.

Beebe is a field naturalist of wide experience, and, in addition to various other trips in tropical and subtropical lands, he spent a year and a half (thanks to the generosity of Mr. Anthony R. Kuser) in a first-hand study of the wild pheasants of Asia; a group which is probably more interesting than any other, taking into account the size of the birds, the beauty of many of them—including the peacocks and argus pheasants—the wide variety in appearance, habitat, and habits of the various species, and their economic and æsthetic importance combined. Recently, while at work in the Amazon valley, his experience convinced him that the state of our knowledge of tropic-life forms warranted a complete departure from the time-honored methods of the collector and museum worker, and the attempt to embark on a scientific enterprise along lines as interesting as they are absolutely new. After some rather aimless roaming he tried restricted and intensive observation: first, by a week's study of a particular cinnamon-tree, bearing ripe fruit, during which week he observed no less than ninety-seven species of birds

from the canvas chair in which he lay; and, second, by digging up two square yards of jungle soil, under the tree, and thoroughly examining all its minute life. As regards the birds, he unhesitatingly shot any which it was necessary to identify—he is not a sentimental dilettante, and knows that it is absolutely essential to have specimens in the hand if there is the least doubt as to the species; but he treated collecting not as an end, but as a means to the end of studying their life histories. As regards innumerable birds the life histories are enthrallingly interesting and yet practically unknown, whereas the skins are so well known that additional specimens are of value chiefly to those ornithologists whose enthusiasms and interests are fundamentally the same as those of stamp-collectors. The two square yards of jungle soil yielded an astounding number of small or minute invertebrate forms, including not only many new species, but some very remarkable new genera.

Partly as a result of this experience, among many others, and partly as a result of a growing conviction that an altogether undue importance is attached to the mere cataloguing of species and subspecies, and to the collection of large series of skins of forms already well known or only differing in minute points from those already well known, Mr. Beebe and his backers and associates determined to try a new kind of first-hand field investigation. The prime object was to secure ample facilities for the study of the evolution and life histories of various vertebrates, especially birds, and of various invertebrates, taking up various problems of embryology, of development, and of habit which can only be studied successfully in the jungle or by the aid of living material fresh from the jungle.

A secondary object was the gathering of live creatures for the New York Zoological Park and Aquarium. The place chosen was conditioned primarily by the need of being in the tropics on the mainland, or on a large continental island, with an abounding and varied animal life within a radius of two or three hundred miles; and secondarily by the desirability of securing healthy living conditions. Demerara met both needs. It is classic ground for naturalists because it was here, a century ago, that Waterton met with the experiences which he chronicled in his "Wanderings," the first book ever written which was devoted to the work of a field naturalist in the wilderness. The animal life, especially of birds, the lower vertebrates, and insects, is wonderfully full and varied. The conditions of life and work at the zoological station, as established by Beebe, are pleasant, healthy, and safe. The danger from poisonous snakes is distinctly less than the danger from automobiles in a land of joy-riders. Mosquitoes and other flying pests did not exist at Kalacoon when I was there; and, although there are many places where they can be found in Demerara, there are many such places equally bad within a radius of fifty miles of New York. Life under the conditions obtaining at the zoological station is wholly different from the life necessarily led by the first explorers, who face starvation and disease and the extremes of toil and hardship in the untrodden wilderness. The Mississippi valley was, in parts, very unhealthy when the first explorers and pioneer settlers penetrated to it; and so was the South American wilderness. Nowadays there are large parts of the latter which are almost or quite as healthy as most of the former.

Kalacoon has many advantages from the naturalist's

standpoint. Beyond it, south, well-nigh to the Amazon, stretches what is still, throughout most of its extent, a virgin wilderness; and yet to the north civilization is at its doors. It lies in a big clearing, and at the farther side of the clearing rises the untouched forest, the edge of the mighty equatorial forest of America, with its abundant and peculiar fauna and flora. A great tropic river lies at its doors, so that the riverine life is added to the life of the clearing and of the towering woodland.

The creatures of the open swamps and flat, marshy plains must be sought nearer the sea. When Beebe and I drove through the sugar-cane country, near the ocean, we saw many water-fowl and waders of various species. Herons were plentiful, and the coloration, and the habits as affected by coloration, of these common birds invite the attention of competent observers whose object is to get at the facts and not to bolster unsound theories. The three commonest herons were the two white egrets and the tricolor heron—which is akin to our so-called Louisiana heron. The two former possess a strikingly advertising plumage; at any and all times and seasons, and under all conditions, they are so conspicuous as to challenge attention. The tricolors were not only relatively far less conspicuous, but under certain of the circumstances of their daily lives it might fairly be said that their coloration tended to make them escape notice. But, so far as our superficial observations went, there was no difference in habit—the coloration, whether revealing or concealing, was seemingly a negligible factor in their life, success, and survival. Yet certain other herons, the bitterns, do skulk and hide, are inconspicuously colored, and seemingly profit by their coloration. These facts are

worth study on the ground. Seemingly some herons which are advertisingly, and others which are, on the whole, concealingly, colored, have the same habits, and never seek safety by eluding observation; others are concealingly colored and try to elude observation. Are these the real facts? If so, is there any explanation? The answers can only be returned by field study.

Some of the familiar birds of the clearing will repay further study. This is perhaps especially true of the big ani blackbirds. They look like big grackles, with high, short beaks, and live in the meadows and in open bush, accompanying the cattle like cow-buntings. Their nesting habits are extraordinary. Apparently the genus has become demoralized and is in a state of flux as regards nesting. Now and then a pair will make a nest for themselves in orthodox fashion. Often, after such a nest has been begun, another female will come along and deposit her eggs in it; and then perhaps another, continually enlarging the nest, until one such nest contained twenty-eight eggs, while over a dozen old birds took part in brooding the eggs and feeding the nestlings; and I have heard of much larger numbers. There is a wide margin of difference in the size both of the birds and of the eggs; altogether it is a queer bird, in an unstable condition. Certainly this is a case where close field observation will develop interesting features in the birds' life history.

Of course, as regards other, and delightful, birds, where the habits are more normal, I suppose there will be little to learn. This may be true of the ques-que-dit king-bird, but it is a bird of so much character and individuality that I wish it could be carefully studied anyhow. It is practically the same bird which the Brazilians call ben-te-ví and which extends far south

into the Argentine. It is a big, truculent, noisy kingbird, olive above, yellow below, with black-and-white stripes alongside the head. It incessantly utters its loud, three-syllabled cry, from which—with a difference of interpretation—it gets its various vernacular titles throughout Latin America. It is bold and familiar, living in the gardens and round the houses. The tanagers and orioles, of many different species, suggest their kinfolk of our own orchards and lawns, but with marked differences; many of the orioles, for instance, nest gregariously. Other birds are apparently identical in habits with their Northern representatives. This seemed to be true of the house-wren and yellow warbler, two of the friendly and intimate little singers of Demerara.

As soon as we left the clearing we entered the vast woods. While in them we usually either followed the road which led from Mr. Withers's rubber-plantation to his lime-orchards half a dozen miles distant, a road over which he drove his automobile; or else travelled the long trail of the gold-seekers, which crossed the automobile road almost at right angles. These two trails, by the way, rendered it easy to find one's way back, by means of the compass, even if for the moment puzzled as to the direction when in the pathless forest; and as one could walk along them easily and noiselessly they offered special advantages to the observer. In thick woods even an Indian finds it hard to approach game unnoticed, and usually gets it by lying in wait for it or else by patrolling the river and sending his dogs into the woods to chase the hunted animal into the water. In the forest we came on a small, rude platform, which some time previously had been built by Indians for a game ambush. Doubtless at that time

a game trail passed it. It consisted of a couple of poles lashed to a tree trunk with tough creepers, at a height a little above a man's head. On this platform the Indian crouched and waited, with the motionless patience of the savage, until tapir or deer or peccary or paca came along; for if there is no movement by the watcher, and especially if he is raised above the ground, even although only a few feet, animals are apt not to observe him.

In the heat and moisture of the tropics the struggle for life among the forest trees and plants is far more intense than in the North. The trees stand close together, tall and straight, and most of them without branches, until a great height has been reached; for they are striving toward the sun, and to reach it they must devote all their energies to producing a stem which will thrust its crown of leaves out of the gloom below into the riotous sunlight which bathes the billowy green upper plane of the forest. A huge buttressed giant keeps all the neighboring trees dwarfed, until it falls and yields its place in the sunlight to the most instantly vigorous of the trees it formerly suppressed. Near the streams the forests are almost impassable, so thick is the tangle below; but away from the streams the walking is easier, because only a few bushes and small trees grow in the perpetual shade. To the newcomer one unending wonder is the mass of vines, the lianas or bush-ropes; everywhere they hang from the summits of the trees, or twist round the trunks, or lace them together. A few kill the trees; most seem to do them no damage. Some are huge, twisted, knotted cables, dragging down the branches around which they are wrapped, and themselves serving as supports for lesser vines that twine around them.

Others stretch up, up, as straight and slender as the shrouds of a ship, until they are lost overhead in the green ceiling of interlocked leaf and branch. Of most of the trees I did not know the names; but among the tallest were the mora, with huge flying buttresses, and the greenheart, with its white trunk. It was unending pleasure to walk through the towering forest. In the shade it was always cool even at midday. There was no wind. All sounds seemed faint and far away. Under the solemn archways of the trees it was dim and mysterious, like some great cathedral at dusk.

Outside, in the clearing, it was very hot as soon as the sun was well above the horizon. But in the early morning and late evening it was attractive, and of course the glory of sunrise and sunset and the splendor of the great stars at night were only to be had in the open. Moreover, the flowers of the open were wholly distinct from those of the deep forest, and were, on the whole, more lovely. One of the most striking was a great crimson passion-flower that closed in the heat of the day. Indeed, in the blinding glare of the hours around noon, all the life of the open spaces sought cover and was silent and motionless; whereas in the forest, although there also the noontide is a time of rest and quiet, yet even then there is always some life stirring.

To an unobservant man, walking quickly and rather noisily through these great woods, they seem empty. But as a matter of fact they teem with life. This life is shy, however, and patience, caution, and quick eyes are needed by the observer. The furred things he will rarely see, save by chance. Once, before sunrise, we heard from our bedroom howling monkeys in the distance; near by the sound is a kind of savage roaring,

really impressive, which suggests some huge and terrible beast of prey instead of a medium-sized monkey. I caught a glimpse of a big black-and-white taira weasel crossing the path ahead of me; but this was the only mammal I saw. With birds it is a different matter. When Beebe and I were walking through the forests, always slowly and with little noise, we continually heard bird songs, even while we were moving, and when we stopped we were sure, after a short time, to catch faint twitters and chirps. Generally Beebe could tell me what the birds were. The more conspicuous ones and those easily recognizable because of some quality in their cries, I often knew myself—toucans or parrots, for example, and the big, showy woodpeckers. One bird was an old friend. He is one of the cotingas, dull-colored and about the size of a thrush. He sits motionless in the forest, about halfway up a tree, and utters at not very long intervals a loud, ringing, explosive call, a hurried, rather musical and arresting sound of three notes. This bird I had seen in mid-Brazil, and, not knowing exactly what he was had christened him, inappropriately, the false bell-bird. The Brazilian rubber-gatherers knew him well—his voice insures the attention of every passer-by—and called him the "rubber-bird," insisting that wherever he called rubber was to be found. Here in Guiana he was credited with similar insight in the matter of gold, and was dubbed gold-bird accordingly. And gold-bird I shall call him.

But my knowledge of the birds was limited to those that were showy and noisy; and even as to these I made mistakes, as when I confused the note of a big oriole with the loud cooing of one of the forest doves—of which there were several kinds, all utterly unlike the

little ground-dove which was underfoot everywhere in the open. Beebe, on the contrary, also knew the inconspicuous birds—the ant-thrushes, wood-hewers, and the rest—which were often the most interesting. He carried his gun, and realized that collecting was important on occasions; but collecting with him was merely an aid to the real work of observing; and, thank Heaven, he is not only a first-rate observer, but a writer able to record his observations. What he writes is not only readable and interesting; it also possesses both charm and distinction. Moreover, he is a man of such broad interest and cultivation that he sees his own particular facts in relation to all their surroundings.

Beebe's walks with me were a mere diversion; indeed, he and his associates had only just moved in, and were barely settling down to their serious work, so that what they had already done and observed represented a mere hint of what was to follow. I was making too much demand on him for information about what we saw and heard to permit him to study anything new. Only twice did he have to resort to the gun. In one case the bird proved to be an ant-thrush. In the other case we heard a peculiar three-note call, like a jew's-harp, in the thick forest near by. It did not sound like a bird, and at first we thought it was a cicada, or tree-frog. But after some minutes' search Beebe saw the performer, an obscure little bird which perched motionless some twelve feet from the ground most of the time, only occasionally shifting its position. He could not make out what it was, and accordingly shot it. It was a small, yellow-crowned flycatcher. We afterward heard several. Beebe has now identified it. He will shoot no others; he will do all he can to find out its

habits; and even the scanty facts we had gleaned were more than were recorded in the only books to which he had access, for these contained merely the description of the skins brought in by some collector.

Already the experiences of the naturalists had raised all kinds of interesting questions. For example, many of the observations indicated differences of habits in closely allied forms which are at present inexplicable, and many more observations are needed to show whether these differences are real or are merely the accidents of individual observation. Some of them related to peculiarities of life history that are extremely strange. For example, they had found half a dozen nests of one little bird, the streaked toady flycatcher, every one of which was built near a nest of the formidable polybia wasp, an irascible fighter near whose home few foes of nestlings and eggs care to venture. But the nests of the closely related ashy toady flycatcher, which they found, were never in such positions. Further observation must determine whether this difference in nesting-site is invariable—whether one little bird always, and its close kinsman never, takes advantage of the neighborhood of so dangerous a protector. The mutual understanding or tolerance between the little bird and the big wasp is sufficiently remarkable; and observation must try to determine whether only one of the two closely related little birds really has the habit, and whether anything can be gleaned as to the effect of this habit on the bird's other habits and on its success in life relatively to the other. What has been already observed in this case is a mere foreshadowing of what Beebe and his comrades hope to find out by observation, carried out at length, of these birds, beasts, and insects, in their native haunts under

their natural surroundings; and surely such observations are far more valuable and important than *mere* collecting—as distinguished from that limited and purposeful collecting which is a necessary part of such observation.

As regards vultures, collecting is at present an indispensable prerequisite to the work of observation. They are not attractive birds to collect, and so have been let rather severely alone, with, as a result, much confusion as to not only the habits of the different species but even as to their identity and as to such points as the colors of their naked head-skins, which fade after death. Again, there are many birds—the hoatzin and ani, for instance—where careful embryological study is necessary in order to get some hint of the ancestral development which has resulted in the existing physical peculiarities.

Of many species which are well known in collections and in the woods, we as yet know nothing as regards some of the most important features of their life history. The toucans, for instance, are among the most conspicuous and wide-spread of South American birds; every traveller has seen them in the forest, every museum possesses the skins of dozens of species and subspecies. But no one had ever studied their nesting habits. Beebe intended to supply the lacking knowledge; and, after I left, his party discovered the nest and eggs of one species of toucan. The nest, a hole in a tree, contained two white eggs, and in them were curious long-tailed embryos. In some nestling parrots Beebe discovered traces of teeth, a reminder of the days when the Age of Reptiles was at its height and all the birds had teeth. All kinds of queer things are to be found out in connection with the nesting of tropi-

cal birds. Once Howes had found the nest of a grallaria, a passerine ground-bird with short tail, long legs, and a loud, whistling voice. It was by a stream. The eggs—previously unknown—were three in number, white with fine reddish-brown spots. The nest was on a big boulder, by water. It was lined with the scales of the tree-fern, and the walls and bottom were composed of very fine green fern tendrils, still alive, which were interwoven with the ferns growing on the boulder, so that the nest itself was actually growing. Another time he found a colony of humming-birds nesting under a bridge; the nests, some fifteen in number, were placed close together and were fastened to the rafters by moss, not mud.

Howes's real concern, however, was with insects. He was already busily at work. The fascinating leaf-carrying ants had of course attracted him. He had found a colony which seemed to be carrying on its work by relays—sufficient time has not elapsed to make his observations more than provisional. Some of the ants had ascended a tree, and cut off many leaves which dropped to the ground. Here other ants took them and carried them to a spot in the road where they made a pile of them; and from this heap they were removed by yet a third set of workers. He had just run across a wasp which was closely related to one of our paper-making wasps, polistes, but which built a mud nest containing one or more cells and fed its young almost as a bird would. It brought to the larval grubs live geometric caterpillars. It did not chew them up and feed them to its young piecemeal, as some of our wasps do, nor, as is the habit of others, paralyze them and store them up in a sealed cell with the larva, but fed them to the larva one at a time and alive.

Taken as a whole, this zoological research station offers a chance for original and productive work such as has not hitherto been even attempted. It represents the effort to strike out on a new line, and the results may be, and I think will be, of the utmost value. It always needs both boldness of conception and very hard work to carry through anything which is entirely original; people naturally like to do both their thinking and their acting along the grooves with which they are familiar. It is earnestly to be hoped that public-spirited laymen who are interested in science will continue to back the undertaking which has been rendered possible only by the generosity of five of their number. It is also to be hoped that in addition to the present director of the station and his associates, other naturalists, trained in both the study and the field, will go down to the station to carry on investigations into special subjects. No man should go unless he is thoroughly trained in both types of work—enthusiasm is not a substitute for training, nor training for wide intelligence. But Messrs. Osborn, Hornaday, and Grant, who are responsible for starting this research station on the edge of the great tropical wilderness, have announced that they will welcome to it all biological investigators of the right type, and the chance is too good to be lost. The government of British Guiana, with characteristic broad-mindedness, is granting every facility to the station; and the generosity of Mr. G. B. Withers has given it excellent quarters without cost.

In Trinidad, whither I went after leaving Demerara, I met several out-of-doors naturalists. One of them was Mr. Eugene André, the botanist, who in his exploration of the Cana River, in Venezuela, so nearly

lost his life; for the genuine explorers of his stamp, who penetrate into the untrodden tropical wilderness of South America, risk the extremes of hazard and hardship. He took me to see Mr. R. R. Mole, who has made a special study of the snakes of Trinidad. He possessed living specimens of a dozen different species, and also of the huge bird-killing spider, and of centipeds a foot long; these sinister invertebrates were fed chiefly on large cockroaches, but they attack small vertebrates without hesitation, and in several instances, of which the details were given me, my friends had seen both the giant spider and the giant centiped kill mice and lizards.

Among the snakes were fair-sized boa-constrictors and anacondas; the latter were said to be much more irritable than the former. Anacondas, moreover, grow to a much larger size. Some species of snakes feed only on certain kinds of animals—mammals or birds or reptiles or insects—and even only on more limited groups, as, for example, on other snakes or on frogs. Other species eat indiscriminately all living things of suitable size. Others when young feed on entirely different animals from those they kill when full grown. Yet others vary individually for inscrutable reasons. Thus, some of Mr. Mole's boas would eat only rats and others would eat only rabbits. The big anacondas, when hungry, mastered formidable things. A nine-foot anaconda in his possession swallowed a three-foot alligator; and in the stomach of a fifteen-foot anaconda he found the teeth of an alligator which must have been over seven feet long. Some young boas would eat only lizards.

I was much interested at seeing a representative of my old Brazilian friend, the mussurama, the devourer

of other snakes, poisonous or non-poisonous. I asked Mr. Mole if it paralleled the friendliness of the Brazilian form to men; he in answer opened the cage containing it and handed it to me to hold. This is by no means the only snake-eating snake in Trinidad; there is also the cribo, which is said likewise to be immune to poison, but which is a less finished killer than the mussurama.

I was especially interested in the two most deadly of the poisonous snakes: the great bushmaster, which among poisonous serpents is only rivalled in size by the diamond-back rattlesnake and by the hamadryad; and its smaller but fiercer and more nervous brother, also belonging to the genus Lachesis, the jararaca, known in Martinique as the fer-de-lance. These ordinarily bring forth their young alive, but a big female bushmaster in Mr. Mole's possession had produced a number of eggs and brooded them in ordinary snake fashion. The bushmaster is a snake of rather sluggish temper, which dislikes to run, and it is formidable because of the immense quantities of poison which it spirts into its victim through the hollow fangs, which may be an inch and a half long. A Trinidad gentleman whom I met, a devoted hunter and lover of wilderness life, Mr. Arthur B. Carr, had dealt much with the species, and had once nearly lost his life from the bite of an individual. He said that this snake was active at night, and that in the daytime it slept or at least lay still in such sluggish fashion that it was difficult to rouse. If in the daytime a man stepped on one, it would bite him unless he showed extraordinary agility. But if he brushed by it, it would only partially rouse itself; if his companion brushed by, it would become more alert but would probably not strike; but if several men were thus travelling in single file

it would almost infallibly strike the third or fourth man. It would also strike repeatedly, not being one of those snakes whose poison is speedily exhausted; in one instance a single individual struck four hunters' dogs in quick succession, killing them. One which was put in a cage with a rattlesnake struck it, and the rattler died of the poison.

It feeds on possums, agoutis, and the like. It goes into burrows, or holes, and it was owing to this fact that Mr. Carr nearly lost his life. He had chased a paca into a hole, and digging after it for some feet he found the paca and killed it, and to his surprise found that the hole continued. He did not then know that when a paca is thus chased into a hole, and finds the end occupied either by a snake, a peccary, or another paca, it will stay half-way down and permit itself to be killed rather than go to the end. He thrust his cutlass into the hole as far as his arm would reach, and touched something which yielded slightly. Again he tried, and moving the cutlass up and down found that the thing had scales—an old and big bushmaster has rough scales—and concluded that it was an armadillo. Again he thrust in, and this time the head of the aroused and angered bushmaster flicked out and struck his hand. He had received from Venezuelan Indians with whom he had hunted a decoction of plant-juice which they asserted to be sovereign against such snake-bites, and he always carried some with him; he now drank it and also slashed the wound, and although he was very sick he recovered. Recovery from the bite of the bushmaster is rare. He tried the remedy subsequently on snake-bitten animals and saved several. It would certainly be interesting to make scientific experiments with this supposed remedy.

The jararaca is in places fairly plentiful in Trinidad,

as it is in Demerara, and in both cases causes some not very important loss of life. In the Antilles proper it is found only in Martinique and St. Lucia, where it was formerly a veritable scourge. In both islands the mongoose was introduced to check it, and the experiment was completely successful, the snakes having now become so scarce that they are no longer a serious menace. In Martinique I visited a hospital, and happened to ask if they had many cases of snake-bite. One of the directors, a white-haired man, answered that they had very few indeed, because the mongoose had almost exterminated the fer-de-lance; whereas in his district, when he was young, before the mongoose was introduced, no less than forty per cent of the total deaths were from snake-bite.

On all the other islands where the mongoose has been introduced, I was informed that it has become a veritable scourge, killing chickens, exterminating ground-birds, etc. In Trinidad it had not had much effect, although on the whole obnoxious; in Demerara I was told that it had had no perceptible effect at all.

These facts, as regards both the poisonous snake and the carnivorous, snake-eating mammal, indicate how much disturbing effect in an island with a limited fauna and how little disturbing effect on a larger land mass with a large and varied fauna, the introduction of the same new species may have. In Demerara and even in Trinidad, the jararaca had numerous rivals and enemies and never attained more than a limited importance; in the two islands it had neither rivals nor enemies and was a very abundant and most formidable pest. The mongoose on these two islands did its work well and almost exterminated the snake, a feat of

capital importance; on the other Antillean islands it found no poisonous snakes and, being without rivals or enemies, became itself an intolerable pest; in Demerara and Trinidad it found itself in a large and varied fauna, it found both rivals and enemies, and it neither seriously diminished the poisonous snakes nor itself became a serious pest.

Carr related his experiences with the coral-snakes, whose poison is, in equal quantities, more deadly than that of the jararaca, but which have much less of it and relatively small fangs. In the daytime he found this snake very sluggish and reluctant to bite. After nightfall it is active, searching for the small snakes on which it feeds. If a man then treads on it or too close to it, it will bite at once, and if it strikes bare skin the wound is dangerous and often fatal. It does not, when about to strike, coil, like the bushmaster, jararaca, and rattlesnake, but lies in a loose figure eight or S-shape.

Carr had seen many interesting things in the woods. His chief success was when motionless and unseen he studied the ways of beasts and birds—as field naturalists worthy of the name should do. Once he heard some red howler monkeys and crept up to watch them unperceived. An old male sat high in a tree; half a dozen females were near him, and several young males were farther off, not venturing near. One of the females went toward the old male, mincing and showing off, pressing close to him; he uttered grunting sounds, not the loud roars of his dawn chant; but all the advances and caresses came from the female. She retired; two others took her place, showing off and stroking his cheeks; again he grunted, and received but did not return the caresses. For some minutes

this went on; then the whole party came down to the ground to pick up some nuts.

I made an interesting trip with three friends—F. W. Urich, the entomologist; G. B. Rorer, the mycologist; and the solicitor-general, Archer Warner—into the northern mountains of Trinidad to see a guacharo cave. The guacharo is an extraordinary bird, akin to our night-hawk or whippoorwill but the size of a barn-owl, which is nocturnal, lives gregariously in caves, and feeds exclusively on hard fruits; that is, on the nuts and seeds of palms. Humboldt visited the great guacharo cave in Venezuela over a century ago, and in Trinidad there are guacharo caves in the sea-cliffs which can be entered only when the water is calm. Hornaday once visited these sea-caves; and both Chapman and Cherrie have since visited caves such as those which I visited.

We motored out some thirty miles, to a point where the governor had most kindly arranged to have horses meet us. Then we rode four hours back among the mountains to a plantation belonging to Mr. Francis Leotand, who had courteously arranged that we should sleep in a room of the overseer's house. It was a lovely ride. We saw blue tanagers and heard the songs of thrushes and orioles. There were repeated showers, and we were drenched before we reached our destination, but between times the sun almost dried us, and the rain made the brilliant green woods fairly glisten. Most of the time we rode under the primeval tropic forest, with its incredible wealth of strange and noble forms of plant life. Cecropias grew on the newly cleared soil. Moras sent out buttresses. Here and there a giant vine had strangled some mighty tree. There was a wealth of ferns on the wet slopes. Orchids

were numerous. Large blue butterflies and smaller red and black ones floated in the glades. In one part of the trail, although the sun was high, a bat flitted. Occasionally we passed clearings planted with banana-trees or cocoa-bushes, the excessively primitive house of the colored owner standing to one side. There were many different kinds of palms. One of the interesting trees or arborescent plants was akin to a wild pineapple. It holds water at the bases of the big, thick leaves, where they jut from the stem, and it is inhabited by a little fauna of its own, including a little frog and a lizard, and also, unhappily, a species of mosquito which breeds in swarms. In places the road zigzagged up steep mountainsides. Elsewhere it crossed brooks. From one point we had a wonderful view out over a magnificent forest-filled valley, a sea of billowy green, sprayed here and there by the orange foam of the immortelle-trees. Twice we came on high hillsides where there were bell-birds. These are not the true bell-bird of the mainland forests, which is snow-white with a voice like the tolling of a bell. They are dull-colored, with curious wattles on the throat, and their voices, although loud, are not musical. They perched in the tops of the tall trees, and sat almost motionless. Twice I saw one in the bare top of a dead tree, and watched it through my single-barrelled pocket-glass. The birds were very noisy, continually uttering their harsh, explosive call; in giving this call the neck was stretched straight out and the head thrown upward.

Early in the afternoon we reached the house of the overseer, a colored man. It stood on a hill in the midst of cocoa-gardens and cocoanut-groves. It was raised on stilts, with a piazza. One room, furnished with a table and benches, was given to us; in the other rooms dwelt

the overseer and his family. A rough stable was near by, up a wet path; a couple of storehouses and two or three palm-thatched cabins, where the barefooted workmen dwelt, were close at hand; the cooking was done with a pot and an earthen fireplace in a big shed, which was open at the sides. The boundaries here, as elsewhere generally in Trinidad, are marked by dracænas, which sometimes grow twice as high as a man's head. Their topmost leaves are red, and they are boldly decorative; the Spaniards named them the "flor réal," the royal flower. On our route that morning, at a turn in the trail through the forested mountain, we had passed a shrine on the ground, where around the crucifix was planted a half-square of dracænas.

After lunch we went to see the guacharos. We followed a stream through cocoa-plantations for half a mile, until we came to where it flowed out of a limestone cliff from a cave which was the guacharo home. Thick forest grew along and over the crumbling front of the cliff; and vines and creepers and wet rock-plants overhung the edges of the cave, partially obscuring it, while water-loving plants grew in front, some with enormous leaves. At the entrance, near which there lay large boulders, the irregular opening was perhaps fifteen feet across and rather higher. Out of it rushed the stream, here knee-deep, and covering the whole bottom.

With torches we entered the cave. It was hard walking, for the clear stream slid over sand, pebbles, and ragged-edged boulders, and might at one moment be ankle-deep and the next reach almost to our waists. The cave twisted, and we speedily passed out of the pleasant half-light of the entrance into obscurity. Immediately we began to hear the birds, and dimly to make them out flapping and fluttering above us. They

uttered loud, growling cries, and also a continuous metallic clacking, and the naked young birds in the nests piped and wailed. It was all very weird, and I did not wonder that the superstitious black peasantry, who believe the woods and waters to be thronged with jumbies, should have christened these birds "diablotins" (the name once given in Martinique to nocturnal petrels which burrowed in the mountains). They will not enter the cave on Good Friday and, although they plunder the nests of the incredibly fat and oily young birds, which are used to eat and also to make oil out of, they regard the place as uncanny. But the birds are merely comic devilkins, poor creatures, are as harmless as they are curious, and should be carefully protected.

The cave must have been occupied for untold centuries, and the ledges and recesses in the sides, and the slabs of rock which were raised above the level of the water—in fact, every portion which was neither too steep nor water-swept—was covered inches deep, in some places a foot or two deep, with guano. The nests themselves, of which we soon began to see many, were on the ledges and in the crannies and holes; and when we were quiet the birds soon began to settle on them. They were made of the guano, being cup-shaped, with thick, raised walls. Some contained two to four short, pear-shaped eggs, white, but stained with the guano; others contained very fat, naked young. We saw the old birds brooding, sometimes one, sometimes both parents sitting side by side. They crouch like a whip-poorwill or night-hawk; they do not perch erect, in the posture in which some museum specimens are mounted. We did not desire specimens and molested nothing.

A singular thing was that in the guano of the nests grew many fungi, slender things like reed-stalks, some-

times only an inch or two long, sometimes a foot or eighteen inches. They also grew elsewhere in the guano, and in places had matted it into a kind of peaty consistency. It seemed extraordinary that they could grow without any sunlight. There was a good deal of life in the place aside from the birds. There were many bats. Beside the water at one spot we found a toad the size of a bullfrog. Insects swarmed, including crickets, earwigs, and moths. Everywhere through the guano were the seeds and nuts of various species of palms; among the commonest were nuts nearly the size of betel-nuts. Some of these nuts were from kinds of palm which did not grow within ten or fifteen miles. The birds emerge from the cavern after nightfall, occasionally uttering their growling cries, and fly for long distances to their feeding-places, sometimes hovering in the air as they pluck the nuts, seeds, or fruits. Whether they also sometimes alight while they pluck them, I do not know. They feed their young by regurgitation and live in the caves all the year round.

We went on and on, wading, clambering over the rocks, slipping and plunging in the darkness. At last, where the roof was still high, but getting lower, we put out the torches. There did not seem to be a ray of light, but this portion of the cave was still filled with the birds, which were flapping overhead and uttering their extraordinary noises; and when we relighted the torches we saw many of them on their nests. Farther in, however, where the roof became lower, only bats dwelt.

Then we halted, waded and clambered back to the entrance, and left the excited devilkins growling, croaking, and clacking behind us. It was late in the afternoon and we returned to the house. We dried our clothes as well as we could, but it was moist and rainy

and they were still wet when we put them on next morning. We dined well on what we had brought with us. My companions had hammocks; I slept soundly on the table. Next morning the sunrise was glorious; the day was clear and bright and the ride homeward was pure pleasure.

XIII

WHERE THE STEADY TRADE-WINDS BLOW

"In the harbor, in the island, in the Spanish seas,
Are the tiny white houses and the orange-trees,
And day long, night long, the cool and pleasant breeze
Of the steady trade-winds blowing.

"And o' nights there's fireflies and the yellow moon,
And in the ghostly palm-trees the sleepy tune
Of the quiet voice calling me, the long, low croon
Of the steady trade-winds blowing."

It was in February and March, 1916, that we took our long-desired trip to the Lesser Antilles and Demerara. Surely there can be no more beautiful islands than those of the Spanish Main. Surely not even in the far East can there be a more lovely tropical wonderland than the coast fringing the Caribbean Sea. We anchored in the sheltered harbor of St. Thomas ringed by high, steep hills; we lay off the open roadsteads of Santa Cruz, St. Kitts, and Antigua, of mountainous Dominica, and brilliant, multicolored Guadeloupe and Martinique, and of Barbados, whose people have the energy of the North. We moored alongside the quay in St. Lucia. On the way back we spent ten days in Trinidad, with its witchery of landscape, full of the loveliness of the mountain tropics and of the tropics of the plain. Finally we touched at Grenada.

After leaving New York in a snow-storm, we drove south through the Gulf Stream into the warmth of sapphire seas where the trade-wind blew steadily. In

the hot nights the stars blazed above us: Orion was overhead, the Dipper lay behind us; it was not until we were near the turning-point of our journey that we reached the low latitudes where, well after nightfall, the Southern Cross rose slantingly above the horizon. Beneath a waning moon we left the Antilles on our journey southward; and the next moon was nearing full when we steamed northward from Trinidad and Grenada.

Everywhere Danish, French, and British officials, American officials, and Creole, British, French, and American non-official friends were more than kind and hospitable. The glimpse into the social and industrial life of the islands was enthralling. But we were on a holiday, our stay was short, and we did not seek to see more than the picturesque outward charm of the scenery and of that human life that was patent to the passer-by.

In the harbors the negro boatmen swarmed round the ship, and black and brown boys dived like otters after small coins thrown into the water. When the ship was coaled the workers were sometimes men, sometimes strapping women as strong as the men, who chattered and sang as they toiled, while their white teeth flashed in their dark faces. Queer fishing-craft, sometimes with russet sails, danced over the foaming combers which broke the azure of the deep. Rows of tall, slender-stemmed palms stood back of the shining beaches, their fronded tops thrashing endlessly in the trade-wind. On the edge of the blue ocean, at the foot of brilliant green mountains, half hidden in the tropic vegetation, stood little towns, clusters of low white or red houses. After nightfall the town gallants sat at small tables on the sidewalks outside the taverns or

under the trees in the open squares. Powerful, finely built black women, and lithe, comely brown women strode along the paths and highroads, erect and supple, all their burdens, great or small, poised on their heads. Sometimes these burdens were extraordinary because of their bulk or weight, at other times they were comic because it seemed incredible that such small or peculiar objects should not be carried in the hand: once, for instance, we saw a woman carrying on her head a solitary white shoe, and another time, of all things, a single egg.

In all the islands legal and political discriminations based on color have been done away. In some the social discriminations are giving way. In others sharp social lines are drawn not only between white and colored—as all shades of cross-blood are called—but between colored and black. The whites everywhere composed most of the upper class, although it also included many of the colored; the colored folk made up most of the middle class, and just as they extended into the class above them so their class was entered by the blacks below them; and the bulk of the laborers, in the towns and especially in the country, were blacks, although many were browns. At the fringes all the classes overlapped or merged into one another.

In Martinique the browns outnumbered the blacks. Elsewhere the blacks were in a majority. Together with the white officials were many colored and some black officials. Substantial race justice is done. Friction occurs, of course; yet, on the whole, there is law and order and a real desire to give each man his chance and to treat him fairly. None of these lands have prospered quite as much as Cuba, Porto Rico, and Panama during the last fifteen years, owing to the

peculiar relations of these three countries to the United States. But they have prospered far more, they have infinitely better and juster governments, than most of the revolution-ridden "republics" that face on the Caribbean and the Mexican Gulf; from the standpoint of life, liberty, and property they are beyond comparison better living-places for rich men and especially for poor men. They reflect honor on the nations to which they belong: the public servants are upright, fearless, and efficient. The English colonies regard England and the French colonies France with devoted loyalty—a loyalty which in each case has been well earned by the mother country. Everywhere we found that the young white men had thronged to the support of the mother country in the war—almost every family we met had kinsmen at the front. Even more striking was the genuine loyalty of the colored men and black men to the flags under which they had found justice. Thousands had volunteered from the British colonies. Martinique and Guadeloupe were under conscription, like France; and these two islands, with less than half a million population, had sent fifteen thousand soldiers across the seas.

The houses that we visited, in the towns and on the plantations, were built for coolness, with thin partitions and wide windows—with blinds but without glass panes—opening everywhere. Usually they stood on posts above the ground. They were pleasant and comfortable; but it behooved the inmates to speak in low tones and move softly, for otherwise the dwellers therein "had about as much privacy as a goldfish." In the gardens was a wealth of bloom; there were hedges of scarlet hibiscus; the corallita turned the latticework and the fences pink; the purple masses of

Bougainvillea were the most conspicuous of all. The fields of sugar-cane made the plains a vast sheet of light green. Elsewhere there were banana-groves, groves of cocoanut-palm, lime-orchards, plantations of coffee and cocoa. The trees were of many different kinds and some of them bore brilliant blossoms, red or white or yellow. The noble cabbage-palms rose like columns loftier and more beautiful than any made by the hand of man. The mahogany-trees spread their gnarled branches like oaks. Very strange, and very graceful, were the clumps of giant bamboo, bending outward, with feathery crowns of foliage on the strong, pliant stems. The dark-green breadfruit-trees with glossy, deeply incised leaves, and the densely foliaged mangoes were restful to the eyes after the bright, pitiless glare of the open spaces. Here and there, in Martinique and Dominica, we came on ravines or hillsides crowded with beautiful tree-ferns. Many parasitic plants, of various and utterly dissimilar kinds, grew on the trunks and branches of the older trees, some with delicate flowers, some with huge leaves like the ears of elephants; while yet others streamed like gray moss or sprouted like grass tufts on the branches. The orange-flowered immortelle-tree is called the "mother of the cocoa," because it is planted to shield the young cocoas from the sun.

We motored for miles on every island, always amid scenery that was a delight to the eye. Each island had a charm of its own. On Dominica the administrator, a delightful companion, a widely travelled, widely read man, took us on a new road that twisted up a steep valley into the heart of the mountains. The emerald tropic forest crowded on every hand, spangled with flowers. At the ends of deep ravines we saw the blue

ocean; while torrents dashed down the mountainsides. The administrator of Antigua, another delightful companion, drove us across the island to English Harbor. In the old days, the days of the white-winged sailing-ships, when the square-rigged, bluff-bowed, wooden war-vessels carried tier upon tier of smooth-bored cannon, this was a famous haven for the fighting fleets of England. Judged by modern standards, the ships were small and shallow, although they were crowded with men and guns; and the placid, winding little harbor would only do for torpedo-boats nowadays. It was surrounded by quiet, wooded hills; and stone buildings, empty and desolate, were ranged near the wharfs. In the fading evening light we looked over still waters that were peaceful with the peace of death, where once the black hulls floated, and we stood alone in grassy streets that once were alive with the hard-bit, tarry fighting men of the high seas. As we drove home, after dark, through the warm, fragrant air, the golden moon rose on our right hand.

Nelson, when only a daring frigate captain, was well known among these islands. Alexander Hamilton lived his early years on them, until he left to write his name in deathless letters on history's pages. Here the after-time empress Josephine was born, destined to greatness and sorrow. In those days the islands were very prosperous; planters and merchants made fortunes rapidly, and were always facing disaster in the shape of hurricane or plague or war; and life was gay and fervid and dangerous.

As far as the inhabitants were concerned, the most picturesque of all the islands were Guadeloupe and Martinique. In these French-speaking islands the negresses and the colored women of the people wore

wonderful costumes. Their dresses were blue or red or orange or green or multicolored. Their gaudy turbans were starched stiff, and, on each island, tied in peculiar fashion. They carried heavy jewelry of beaten gold: bracelets, necklaces, brooches, earrings. They were Catholics, and shrines stood along the roads and in groves and grottos. The governors of Guadeloupe and Martinique were both of them soldiers who had fought in the trenches in the present war, who before the war had seen many strange adventures in other lands. One had been governor of Senegal, on the edge of the desert where dark-skinned Moslem nomads guide their camel caravans. The other had spent three years near Lake Chad, and knew the naked black heathen of the equatorial forest.

In Guadeloupe we drove out to an estate where all kinds of tropic crops were raised, from vanilla and oranges to sugar. We halted at village after village, to receive an address from the colored *maire* and notables, all with manners not merely courteous but polished. In the evening we were given a handsome formal public dinner at the capital, Pointe-à-Pitre. It was carnival time, and the city was in gala mood. At midnight, when we started for the ship, all the streets were lighted and all the people were in them, gay in their festival attire. A band, preceded by men bearing aloft colored lanterns on sticks, marched ahead of us, and our hosts of the dinner marched behind the band; the merry, jostling crowds thronged the sidewalks, and brightly dressed women danced on the pavement beside us, from time to time, as the music struck into some tune they liked. And so we were escorted down to the quay.

We reached Martinique before sunrise, and steamed in close to the ruins of St. Pierre, the awful monument

of the devastating volcanic outburst of Mont Pelée. In the capital, Fort de France, the life that went on was at least as brilliantly picturesque and attractive as in any of those Mediterranean cities which tourists so eagerly visit, and it was astonishing to think how little our people knew of these near-by lands. We of the North dwell in a rather drab world, and on a holiday it is well to see such sights as those of Martinique: the gay dresses and good looks of the working women, the only less picturesque quality of their mates, the quaint, many-hued houses, the beauty of the landscape outside the city, and within the city the great park or savanna with its rows of noble trees, the taverns with their tables outside under the colonnades, the little shops, and all the queer mixture of what is French with what is utterly exotic. The market was a really bewildering place, because of the color—always the color—and the strangeness, not only of the buyers and the sellers, but of many of the wares bought and sold. Very impressive was the review of a couple of thousand new soldiers about to sail for the war zone. It took place shortly before sunset, on the savanna. The troops marched past with soldierly carriage, each platoon of recruits guided by some French veteran who was recovering from his wounds; the bands thrilled us with the "Marseillaise"—fierce and splendid martial music; and the twenty thousand onlookers made a blaze of every known color and combination of colors.

For the last hundred years life has gone on quietly in the West Indies. Slavery has been abolished. Peace and justice have been measurably attained in all the islands where the government has been steadied by outside help of the right kind, including especially those freed by our own little war of 1898. It is now only

Hayti in which the bad old conditions obtain, among a people who have hitherto failed to show fitness for self-government. But there was nothing quiet about West Indian life during the three and a quarter centuries that followed the discovery by Columbus. For nearly a century the Spaniards were not interfered with by other Europeans; and they played the chief part in the extermination of the original Indians, who have practically disappeared, save that in places a little of their blood remains in the mixed population. Very early, however, negroes were introduced as slaves to supply the place of the vanishing Indians, and these soon far outnumbered the whites (and do so now, the people from Hindoostan being the only ones that can stand the competition with them). In the days of Queen Elizabeth the English, and second to them the French and Dutch, burst into the hitherto closed seas, and waged stubborn and successful war with the Spaniards. Even when the three intruding nations were at nominal peace with Spain the reckless and lawless rovers who made up the bulk of their seafaring folk refused to be bound by the peace, banded themselves together into organizations of freebooters, and as buccaneers sacked Spanish cities and harried Spanish galleons. For over a century before the close of the Napoleonic struggles there was a continuous succession of wars waged between England and France. Huge fleets came to the West Indies and some of the memorable sea-fights of history took place in these waters. At the close our own frigates and privateers made their appearance and showed themselves formidable. Throughout the period these regular wars were supplemented by slave insurrections ashore and by piracy, often on a very large scale, afloat.

Under such conditions most of the islands changed masters, some of them again and again, and the population is everywhere ethnically mixed. Save in Cuba and Porto Rico the negroes almost everywhere immensely outnumber the whites, but are divided from one another linguistically just as are the whites, and in some places the flag and the tongue do not correspond. In the Danish islands the general language, except among the officials, is English. In Dominica and St. Lucia the English flag floats over people who for the most part speak French, and in Trinidad over people some of whom speak Spanish, others French, others English. I was told of one small island—I forget the name—which belongs to France but where half the people speak Dutch and the other half English. The most amusing case was that of the little mountain island of Saba. I was told about it by an American friend, a Harvard man, at whose cool and delightful house on his lime-plantation in Dominica we took dinner. He had employed a crew of these islanders on his yacht and had visited their home. They are white men. They are the descendants of the old buccaneers who made the island their stronghold and, when times grew perilous, offered its sovereignty to the Dutch. It is Dutch now; but the postmaster is the only man who speaks Dutch, although one of the most numerous of the very few family names, Vanderpool, is obviously derived from a Dutch buccaneer. They all speak English, and they are a very honest, hard-working race, although not particularly intelligent. Exactly how these traits were produced in the offspring of the buccaneers is worth the serious study of masters of the sciences dealing with eugenics, heredity, and environment!

When we reached Demerara—British Guiana—we

were on the South American mainland. The climate is not merely tropical but subequatorial, for Demerara is only a few degrees north of the line. The coast is low, and the flats adjoining the ocean, covered with rich sugar-plantations, are actually below sea-level, and the waters are kept from overwhelming them by an extensive series of dikes. It is only in the back country that the landscape becomes as bold and beautiful as that of the West Indian Islands, with river scenery in addition.

Through leagues of muddy shoal water we steamed to the quay at Georgetown, the capital of the colony. As usual we were received with more than cordial hospitality; two of our kind new friends, the solicitor-general and his wife, actually turned over to us their comfortable rooms in the airy, pleasant hotel. It was a lovely city of the mid-tropics. The tree-bordered streets were broad and spacious. The attractive houses, all doors and windows and latticework, stood each by itself and bowered in brilliant flowers. The club was built so as to give entry to every breeze. There were few mosquitoes in the city itself, and although it was hot a pleasant breeze blew at night. We dined at the cool, open house of the governor, and on another day went there to a garden-party among the flowers and flowering bushes.

We drove through the botanical gardens, which are among the two or three finest in the world. Here, I am obliged to admit, the mosquitoes were rather a torment. But they could not interfere with our enjoyment. The stately trees were of many different kinds. On the waters of the numerous canals and ditches floated the immense leaves of the Victoria Regina lily, each as big as a tea-tray, the resemblance being heightened by the upturned rims. The great flowers were

pink or white, and among them were other water-lilies with blue flowers. The jacanas, or lily-trotters, handsomely colored birds the size of a chicken, with very long, slender toes, ran over the lily-pads as if on dry land. When they flew their legs were stretched behind, like a tail. They were old African acquaintances. Herons of different kinds, but mainly the two species of white egret and the tricolor, were tame. In one lake were some manatees, which were feeding on water-plants and on grass which had been thrown in to them. The manatee, called "fish-ox" by the Brazilians, is a bulky, purely plant-eating water-mammal, eight or ten feet long, with smooth, thick skin, blunt snout, fore flippers, and tail. It is not amphibious any more than a whale or porpoise, and appears above water even less often; although on very rare occasions it may raise its head and neck on the mangrove roots, or alongside a bank to graze or browse. Ordinarily it eats below water. As we watched them we would see the water-lily leaves twitch and be drawn under, or the floating plants sucked down. Continually we saw the nostrils thrust to the surface and opened, looking like the muzzle of an old-fashioned double-barrelled shotgun. But this was literally all, except that once, for a moment, a patch of brown hide about a foot square appeared. It is a sluggish, slow-moving creature, preferring still water, and entirely harmless; and interesting because, except for its brother, the dugong, no other beast in any way resembles it. But it does not lend itself to spectacular attraction! I somewhat sympathized with a lady who remarked, anent the manatees having been placed in a lake which was once covered with water-lilies, that even if the water-lilies were less interesting than the manatees the former could be seen

and the latter could not, and that now the manatees had eaten all the water-lilies, so that there was nothing whatever to be seen.

Demerara was once Dutch. A little Dutch blood remains among the whites; and a certain type of mixed blood, part Dutch and part Indian, persists in the back country. These half-breeds are known as "bovianders"—"up-yonders" or "above-yonders" in Dutch dialect—because they live on the rivers above the settlements and back of the beyond. Some Dutch names were retained: "stoop" is used as it is in New York, and a dock or landing-place is called a "stelling"; and many of the plantations are still called by their old Dutch names.

All men and women who when they travel wish to see something different from what they see at home, who care to visit pleasant, rather out-of-the-way places, a little off the beaten track of ordinary tourists, and who have no very long time for their holiday, should assuredly visit the West Indies, and should make the trip include Demerara. There are charming, cultivated, hospitable people; comfortable quarters; no more danger from fever or insects or snakes than in New York from automobiles or tuberculosis; and no place more typically tropical can be imagined. It is ablaze with light and vivid color. Of late years, perhaps by way of reaction against old-time exaggeration, there has been a tendency to depreciate tropical coloring. Such understatement is farther away from the truth than the original overstatement against which it protests. In the right season the brilliancy of the wet tropics is almost overwhelming. Of course in the very high and dense forests everything near the ground is in such perpetual shadow and half-light that all the gor-

geous coloring of bird, flower, and leaf is in the sun-bathed, shower-drenched country of the tree-tops overhead, and cannot be seen by the wanderer in the dank, vine-tangled gloom below. But where there is open forest, or where the forest is broken by glades, or where patches of forest, patches of bushes, and patches of treeless land come together, the coloring is unapproachable by anything seen in the North—save for one or two trembling days when the springtime fervor is most intense, or when in fall, here and there, the trees, in bravery of crimson and saffron, greet the glory of death. In the tropics the white flame of the sunlight brings out every detail of the incredible variety in form and hue of the bush leafage; the birds show every known tint in every combination; and multitudes of trees, bushes, vines, parasites, plants of all kinds bear flowers that challenge the eye by the delicacy or the bold splendor of their coloring.

In Demerara the black and colored people are, as elsewhere in the West Indies, at least tenfold more numerous than the whites. Among the whites the Portuguese stand rather apart from the people of other European stocks. The native Indians are not prominent. There are wild but peaceful tribes in the interior, Caribs, Arrawacks, and others; there are occasional villages or small communities of civilized Indians, either by themselves or adjoining other settlements; and there is a strain of Indian blood both among the blacks and among the whites. But it is not important. Far otherwise is the case with the coolies from Hindostan. These were brought over, and are still brought over, to supply the demand for labor. They have been excellently treated, they have prospered, and are far better off than in India, and in the large majority of cases they

continue to live in the colony after their term of indenture is over. They are mostly Hindoos, but there is a fair percentage of Moslems. They live in villages, or sections of villages, of their own, work on the land by preference, rear plenty of children, and already nearly equal in numbers the people of negro descent. In the second generation a number of them become Christians; but as yet there has not been much mingling of blood between them and the negroes. Their presence, and the peculiar costumes of the more recently arrived—the turbans, the white tunics, the scanty skirts, the smear of red paint as a caste-mark on the forehead—add a touch of almost fantastic interest to the shifting crowd of wayfarers, hucksters, and laborers. They are slender, rather good-looking people; the young women would be pretty if they did not disfigure themselves with nose-rings and with nose-buttons—metal buttons on the side of the nose. Northern Europeans, Portuguese, native Indians, Chinese, negroes, Hindoos—all are to be found; pure and in every stage of mixture and every social grade. A century hence what product will this melting-pot have produced?

As we landed on the Georgetown quay our friend Beebe, the naturalist, was there to greet us. Next day, in company with the attorney-general of the colony, he took us out to his natural-history station or laboratory, which I have described in the previous article. We started early in the morning. We first crossed the Demerara River, then motored for an hour to the Essequibo River, and ascended it for four or five hours in a little government steamer, which the governor, with characteristic thoughtfulness, had put at our disposal.

On the way up we stopped at a river hamlet where stood the ruins of an old Dutch fort. Rusty cannon lay

among the rank weeds, and the crumbling walls and bastions were made of small bricks; in Demerara these small bricks, wherever found, in arch or wall or walk, are the sure signs that once the land was held by the Hollanders. The old wharf remained. There were a few palm-thatched cabins and frail houses with unglazed windows; between them wet, black paths wound through the green vegetation. The local schoolmaster, a courteous colored man, showed us round. In one of the cabins dwelt a Carib family, the father and son being boatmen; the other people were blacks or mulattoes, with a Hindoo storekeeper, and a Chinese half-breed whose occupation I did not gather. It was Sunday, and in what had once been the Dutch Government House church was being held by a Congregationalist catechist. The congregation consisted of some twenty men and women, with a few children; all were dressed decently and were serious and devout. The catechist himself was a nearly full-blood Carib Indian, an intelligent, educated, self-restrained man, who was reading the lesson well. No one could witness the services without a cordial appreciation of the good that was being done, of the fight being waged to increase the area of real civilization.

At last we reached Three Rivers, the point which, near the junction of two affluents with the main stream of the Essequibo, Beebe had chosen for his laboratory. We stayed at the house of Mr. and Mrs. Withers, who own a large rubber-plantation and manage a large lime-plantation; and we shall not soon forget their warm-hearted hospitality; while our hearts went out to their small daughter, a dear little girl of eight. She had been brought up in the wilderness by her mother; and evidently it had been the best kind of education, for to the

grace of unconscious refinement she added the charm of a quaint self-reliance in her solitary amusements and interests. The house stood on stone piles; the doors and windows were many; the wide hall went from end to end; in the veranda living-room were easy chairs and tables with books and magazines. The little Boviander maid servant was neat and efficient. It was hot, of course, but not unpleasantly so. There were no mosquitoes or flies, although we had to sleep under mosquito-nettings, on account of the vampire bats. Tanagers and honey-creepers familiarly entered the veranda. A tame little parrot lived most of the time in the garden, but also climbed around the rooms and flew through the hall. The house was on a hilltop, and breezes blew over it. Beyond the clearing round about stood the high green wall of primeval woodland. Close beside ran the great river, shimmering in the sunshine, sometimes with glassy, unbroken surface, sometimes lashed into waves by tropic rain-squalls. Far to the south, across countless leagues of unbroken forest, lay the dim mountain ranges which held the sources of the river; northward it flowed to the sea.

We were at the southern limit of agricultural settlement. Seventy miles inland were gold-diggings. A couple of miles east of the house lay a road chopped through the forest and leading straight to the gold-fields. It was the gold-diggers' road. For seventy miles there was no house along it. Singly or in small parties the gold-seekers travel it on foot, going toward the mines; they are for the most part black or brown natives of the colony, with now and then an outsider. They carry their own scanty store of food, and camp wherever night overtakes them. If they fail at the diggings they struggle back along the road, the weaker

and more dispirited dying by the way and being buried in shallow, nameless graves. If they succeed they hire a canoe, with Indian paddlers, and descend the Essequibo in triumph. We met one such party on the river. The canoe was crowded with men and one or two women. They were chanting and singing; they were clad in white clothes; and the blades of the ten paddlers glistened in the sun as in rhythmical union they rose from and dipped into the rippling water.

The rubber-trees were being tapped, tin cups holding the white fluid that flowed from the V-shaped grooves. Such a clean, wholesome-smelling business! And the work on the lime-plantation, which we visited, seemed equally attractive. The forest must, of course, be cleared for these orchards of limes and of rubber-trees.

From Demerara we sailed to Trinidad. Trinidad is of totally different formation from the other, purely insular, West Indian islands; it is really a piece of the mainland, a broken-off bit of the closely adjoining, mountainous north coast of Venezuela. It is hard not to speak of it in superlatives; for it is like a little paradise. Our steamer skirted the north coast and at sunrise went through one of the bocas or channels separating the northeast corner of the island from certain mountainous islets. As we turned southward we saw on our starboard beam the blue outlines of the lofty Venezuelan shore. Rounding the point we passed by little rocky islands, on each of which stood one or more bungalows, whither the well-to-do citizens of Trinidad retired for week-ends. An hour later we had anchored off the chief city of the island, Port of Spain. Behind it as a background stood high mountains of bold outline, covered to their peaks with the rich tropical forest.

To the south stretched flats of bright-green sugar-cane. The picturesque little city lay at the water's edge.

Port of Spain is a most attractive town. From the sea the many-colored houses and the palms stamp it with the familiar tropic look of the West Indies. The streets are clean and the sanitation excellent; the Panama Canal Zone set the example of what could be done amidst dense jungle and under torrid skies in the way of cleanliness and hygiene, and now Port of Spain can itself serve as a model. The houses in the older part of the town are deep-walled, with tall doors and windows, and entrance to the shops may be between the pillars of colonnades. Elsewhere the houses are of light and flimsy make, painted any hue from red to mauve. Sometimes they front directly on the street. Sometimes they are surrounded by open gardens, brilliant with crimson poinsettias and masses of purple Bougainvillea and other flowers, yellow, pink, or blue. Sometimes they are behind walls, and through gateways one gets a glimpse of a home life led in rooms darkened for coolness, in dim rooms lying behind jalousies, with broad verandas in front, also darkened. There are many churches. The Roman Catholic cathedral stands surrounded by old flowering trees. Around the Anglican cathedral rise noble palms, which contrast with the many-branched, many-leaved forest kings of more normal type, much as a Greek temple contrasts with a Gothic cathedral.

The pleasant, roomy, airy hotel, where the dining-room was really a big open veranda, fronted on the park, which is always called the savanna. There were no mosquitoes or flies, and the nights were not hot. All our surroundings were lovely. The savanna is nearly three miles round; it holds a race-course; and a trolley-

line skirts it, just within its edge. In different corners there are open groves of large trees: the saman-trees, with wide-spreading branches like giant pasture oaks, were among the handsomest; and many parasitic grasses and flowers grew on the rough places of the trunks, and extended in thick beds along the nearly level surfaces of the great limbs. Six handsome palms stood in a row by themselves out in the middle of the grassy plain. Apparently the savanna was a grazing common, too: herds of cattle—tame, rather friendly beasts with much East Indian blood in them—lived there permanently, and showed no excitement except when suddenly assailed by some violent, although transient, rain-squall. We frequently walked round the savanna, after our early cup of coffee—for in Trinidad, as in Continental Europe, "breakfast" comes at about noon, and is what at home we would call lunch. Twice we visited the botanic gardens, on the opposite side of the savanna, beside the dignified and comfortable Government House. These gardens were not as handsome as those in the capital of Demerara, but they possessed one inestimable advantage—there were no mosquitoes, and so we could loiter through them, or sit at our ease on benches under strange trees of dense foliage or clusters of splendid, swaying bamboos.

Just outside the town we visited a most charming house, which seemed the ideal of what houses should be in these lands. Originally, over a hundred years ago, the place was Spanish, and the formal Spanish terrace and garden still remain. But the house was built by the father of the present owner in the first half of the last century, this present owner being an altogether charming French creole lady of over eighty, than whom there could be no more delightful hostess. We reached

the house at sunset. It stood back from the road. On one side a grass-grown avenue of noble palms showed where an old road ran—perhaps to the vanished house of the vanished Spanish grandee. The drive to the front door led under and round huge saman-trees. A wide flight of steps led gently up to the wide front door of the low house. This door was open and so was the equally wide door opposite, on the other side of the house, so that we could see through. Within, the silent, spacious rooms, already cool, were furnished in a dark mahogany, restful to the eye. Behind the house we walked on gravelled paths between flowering bushes, to the old stone terrace, with its worn balustrade, and seats under the trees. Below and immediately in front were the gardens, filled with flowers; some of them familiar roses and jasmine; some strange and of gorgeous hue, while orchids grew on the stems of the palms. Across the garden, through the rapidly waning tropic twilight, we looked up a beautiful valley to high mountains, clad from spur to sheer summit in the wonderful green of the mighty forest.

Twice we drove to waterfalls—one in the Blue Basin and one in the Caracas Valley. In each case we had to walk or rather climb the latter part of the way. Both were lovely. The Blue Basin was a clear pool in a recess of the mountainside, so that the steep slopes almost surrounded it. The stream came foaming down from ledge to ledge before it sprang over the last into the pool, through a dense and tangled mass of lush vegetation, which choked the spaces among the trees. The wild banana sent its huge leaves upward among small palms, and in the dense shade of the forest, with the sun just over the mountain crest, it was cool and pleasant beside the water. It was a wild little spot; I

had seen pools almost like it at the foot of Mount Kenia; it looked as if it ought to be the drinking-place of mighty beasts, as it would have been in Africa.

The Caracas fall was farther away from Port of Spain. The driver of our motor was a little uncertain as to the route. But he picked up a guide while we were still five miles off, a good-looking, pleasant-faced colored man who spoke in a soft French patois. He had innately good manners, and he was a man of taste, too; he picked some pretty flowers while we were walking back from the fall, and we supposed that he meant to give them to my companion at parting; but no, to our pleasure he evidently wished them for himself, and after, with much politeness, he had parted from us, he carried them off up the hillside to his own little house.

Under his guidance we drove, first along the main road to a little hamlet, and then along a cross-road as far as we could take the motor. We left it near two or three houses, where coolies dwelt; beyond there was a family or two of negroes. Then we walked up a rather steep, winding path for about a mile, while thrushes, tanagers, and orioles sang in the near-by trees. The fall was far higher than the other, the stream hurling itself over a great cliff and reaching the bottom in sheets of filmy spray. Ferns and flowers crowded around the drenched rocks, and rainbows wavered in the little gusts of rain that, as we looked, alternated with bursts of white sunshine. As we descended the hill toward the motor, the green of the forest on which we looked down was broken in many places by streaks and patches of orange, where the great immortelle-trees lifted their flower-filled, nearly leafless branches. These immortelle-trees grow wild in the forest, in addition to being planted as nurse trees in the cocoa-

plantations. Their flowers are bright orange, and where there are many of them they lie like an orange veil over the green of the forest. They do not show so boldly as the crimson flamboyant trees in their season.

Sometimes we drove through the crowded streets of the town, where all the foot passers-by seemed to prefer the middle of the road to the pavement. All was strange and foreign. In the big stores the proprietors might be either white or colored. But almost all the attendants were colored; and in addition to the strains of white and negro blood there would sometimes be obvious a mixture of Indian or the oblique eyes of the Chinese.

One morning we drove from Port of Spain north along the coast, and then across a promontory to a beautiful little bay, where the municipality has built a public bathing-beach. There were clean bath-houses, and a pleasant, dark-skinned bathing attendant who, when we had finished our bath, brought water in sections of hollow bamboo trunks to wash the sand from our feet. There was a beach of fine, white sand, with the surf beating gently in under the palms; and the swim in the clear, clean water was unalloyed delight. We had to duck our heads continually on account of the sun, but the water was so warm that we could stay in as long as we wished.

Once we drove entirely across the island to the east coast, where our host, a Scotch gentleman, the wealthiest man on the island, had a bungalow, mounted on stilts, to which he and his family and friends sometimes came for the week-ends. On our way thither we passed through village after village, sometimes of coolies, sometimes of colored folk.

At last we came out on the coast, and followed its

bold curves for miles, watching the white surf beating on the rocks and beaches. A couple of miles beyond the house, near the mouth of a little river which was crossed by an old-fashioned hand-pulley ferry, we went for a swim.

On another day we visited the famous asphalt lake, as the guests of the American company that owns it. We went down on one of the company's steamers with a gay party of our new friends, who were doing everything that hospitable kindness could suggest for our pleasure. The lake, with the pools of water on the surface and the tree islands in the midst of it, was even more curious and interesting than we had supposed it would be; and so were the oil-wells. The men doing the work were for the most part Americans. Two of them wore the Panama medal, and all were vigorous, capable young fellows, of the not-too-proud-to-fight kind—the kind that won the West in pioneer days, and fought the Civil War to a finish, and on the preservation and development of which depends the future greatness of the republic.

One Sunday morning before church we drove to the market. This is held, as is generally the case in the larger West Indian towns, in and around a big, well-kept shed or open building provided by the municipality. Each man or woman pays a small sum to the clerk of the market for the space where his or her fish or meat or garden produce is exhibited. Coolies, negroes, mulattoes, of both sexes and all ages, in bright dresses and curious head-gear, compose the throng of buyers and sellers. The tropical fruits and vegetables are arranged by the venders in little piles, and on the top of each pile a brightly colored tomato or mango, or something else red or purple, is if possible so placed as to catch the

eye. Besides beef, pork, mutton, and especially fowls, ragged brown hunters may have brought in agouti or small deer or paca—this last being, by the way, the very best meat I have ever eaten, wild or tame. The fish are of many kinds, and at some of the stalls slabs and portions of shark's flesh are sold, both to negroes and coolies. In the midst of the crowd we observed a tall, pretty mulattress with a little green-and-blue parrot on her shoulder; the little bird was obviously a familiar pet and now and then its mistress would lean her head toward it and rub it softly with her cheek, much to the little bird's satisfaction.

When we arrived at Trinidad the carnival was about to begin. In old times this was the occasion for as wild street merriment among the upper classes as the lower. But at present the young men and girls of the upper classes only look on at what occurs out-of-doors, and confine their active participation to private dances; where, like true creoles, they dance with ardor all the night long. The public carnival is left chiefly to the working people of the towns, and to the peasantry, who on that occasion flock into the towns and villages and patrol the roads between. The black police, under their white commanders, are very much on the alert and during the days and nights are never suffered to go out singly, keeping in squads so as to overawe the boisterous; for during the nights the excited gangs are apt to wage vigorous war on one another with stones and long sticks.

On the last afternoon of the carnival a friend took us in his dog-cart through the streets where the revel was at its height. Many carriages were out, with white, black, colored, or Hindoo occupants; and very pretty some of the dark creole girls were. Few of these, how-

ever, took part in the revel. The people in costume were almost all on foot, moving slowly down and up the various streets, while the onlookers formed a dense mass on the sidewalks, standing or sitting, and filled the balconies and windows above. To my unaccustomed eyes the holiday costumes and general aspect of not a few of the spectators were almost as out of the common and attractive as those of the professed holiday-makers in the centre of the street.

The coolies from India have been an addition of great value to the population of Trinidad and Demerara, and they have themselves immensely benefited by the change. One serious trouble has been the comparatively small number of women among the immigrants; but this, of course, tends to disappear as the generation born on the island grows up. Of this younger generation, born on the soil and educated in the schools, a considerable number become Christians, and some intermarry with representatives of all the other races—I have myself seen the offspring of such marriages with negroes, whites, mulattoes, Chinese, and native Indians; and, although most of them keep to their own in marrying, their intolerance of creed and caste diminishes, their use of English increases, and their assimilation goes on.

In a sketch like this it is not possible to discuss the complex, difficult, and absorbingly interesting topics of most importance to the ultimate future of the West Indies, such as the questions of race, of sex relations, and of industrial development. They are none of them simple; and they are well worth the most intelligent, dispassionate, and yet sympathetic study. The application of formulas and theories developed by well-meaning outsiders who dwell under radically different

conditions works only harm. One thing is certain. No race ever so sacrificed the permanent welfare of the race to the profit of the individuals of two or three generations, no race ever for temporary ease and gain invited such nemesis of race destruction as the Northern white race—English, French, Dutch, and Danish—did by the introduction of black slavery in the West Indies. Whites can live and thrive in these lands; not only are the upper-class whites of creole origin in the islands a handsome, vigorous, and fertile people, but the same thing is true of the few spots where white yeoman farmers or fishermen have permanently established themselves, as is notably true of Saba, but also in small isolated localities which I came across elsewhere. The white did not die out because he could not live and work. He died out because for his ease and profit he wickedly introduced negro slaves whose descendants elbowed his descendants from the land—the process going on at practically the same rate of speed before and after slavery was abolished. Numerically, except in the Spanish islands, the whites are now but an unimportant fraction of the population. They still form almost everywhere the bulk of the small upper class, and a small, but important, element in the much larger middle class; but even in the upper class the colored blood is slowly gaining ground. Nowhere is there a more sincere effort made to do justice, without regard to color, on the merits of each man, in all civil and industrial relations. Such justice can never be done, in the West Indies or anywhere else, unless each man is made to understand and to act on the theory that the full performance of duties should be the prerequisite to any claim for the enjoyment of rights; and that words and com-

binations of words which do not and are not made to represent facts result in well-nigh unadulterated mischief. For over a half-century in the West Indies the negro has done far better in the islands where the government has been, at least at the top, under predominantly white control than he has done in Hayti, whence the whites were expelled with fire and sword a century and a quarter ago. The whites of Hayti came to complete and utter destruction because their forefathers had introduced slavery, so that for generations they ate their bread at ease in the sweat of other men's brows; and then the blacks of Hayti avenged this crime by a crime of their own as monstrous and as short-sighted, and by so doing condemned their own descendants to lag behind or go backward, while their fellows in neighboring regions struggled painfully upward and onward.

I have made no attempt to give the names of our many kind hosts and friends or tell in detail of their hospitalities and friendly acts. Everywhere we were shown all possible kindness and courtesy; and most in Trinidad, simply because in Trinidad we stayed longest. Our Trinidad friends were some of British, some of French, others of Spanish, Corsican, German, or Portuguese blood, usually with several of these strains in their veins; and manlier men or more charming women are nowhere to be found. There was in them a note of fine gallantry; for they were indomitably gay and cheerful, carrying their heads high; and yet all had sent their sons and brothers to the war, for they are deeply loyal to the empire. I was much struck by the fact that the Catholics among them, of French, Spanish, or Portuguese extraction, had usually sent their children to Catholic academies in England for their

higher education. All of them did everything in their power to make our stay on the island pleasant; and they all came down to bid us farewell on the quay or to accompany us out on the tender and wave us good-by as we leaned over the ship's side.

The morning after leaving Trinidad we were anchored in the beautiful landlocked harbor of Grenada. High hills, brilliant green with wonderful tropical vegetation, and one or two of them crowned with gray old forts, surrounded it on three sides. At the bottom of the bay the little town lay, seeming as if bowered in palm fronds, for everywhere the palms sprang erect and slender above the low white and pink and blue houses. Like so many of these low-built, palm-sheltered tropic towns, it was a real little "golden city of St. Mary's"; again and again these little tropic towns made us think of John Masefield.

After a delightful motor ride along the precipitous edge of the island, through scenery both wild and lovely, we took lunch at Government House. As elsewhere so here we were deeply impressed by the gallant bearing of our hosts; we trespassed on their courtesy only because they insisted; for of their nearest and dearest some had died at the front and the others, at the front, were facing life or death with equal hearts. The pleasant, roomy house stood open to the breezes; birds of bright hue flew freely through the rooms and one pair had made their nest in a spot made ready for them.

Grenada has travelled farthest along the road on which most of the West Indian islands are travelling. Her resident white population, non-official, has almost vanished. It is an island predominantly of black or colored peasant proprietors. They are doing well,

thanks to the orderly justice maintained by the representatives of the British Government; they are loyal to the British flag, and in this war have sent nearly five hundred men to join the British army. It is well to face facts. As yet most of the independent states fronting the Gulf of Mexico and the Caribbean Sea have failed to make even a beginning in the path of progress trodden by such South American commonwealths as Brazil, Uruguay, Argentina, and Chile. In the lands under English, French, *and American* (United States) control the conditions of present life and the prospects for the future are immeasurably better, for the people as a whole, and especially for the poorer people, than in most—not all—of the neighboring so-called "independent" states.

XIV

HARPOONING DEVIL-FISH

At the end of July, 1908, Mr. Russell Jordan Coles, by vocation a tobacco-dealer of Danville, Va., and by avocation a sportsman and field naturalist—especially an ichthyologist—was at Cape Lookout, North Carolina. A heavy gale blew up and several vessels were partly wrecked. The life-saving crew of the Cape Lookout Station, although hampered by an antiquated and outworn equipment, did everything possible to save them. However, despite their gallantry and efforts, one of the vessels—the *John Swann*—would have been abandoned and have become a wreck had not Coles been in the harbor. He was aboard his hired boat, and he called for volunteers and put out to the rescue. The captain and owner of the boat, Charles Willis, and five other men accompanied him. They were able to rescue the vessel after a very exhausting and dangerous struggle.

Coles was much impressed by the poorness of the equipment of the life-saving station and the neglect with which it had been treated by the government—unfortunately the life-saving service, of which there is nothing an American should feel more proud, has little political influence and is sometimes shamefully overlooked. Coles found that the senators and congressmen of the neighborhood had been either indifferent to, or unable to help in, the matter. He announced that

he would write to the President direct. Everybody assured him that his letter would receive no attention; but, having been accustomed to dealing with the dangerous game of the sea, he was not much afraid of politicians on land, and he wrote direct to the President forthwith. Within less than a week he received a communication from the President that he had taken up the matter. In the same mail came a communication from the general superintendent of the life-saving service stating that he had been directed to see that the shortcomings were at once made good. Within sixty days the shortcomings *were* made good; and the devoted, uncomplaining, stalwart men of the life-saving station, who so willingly risked their lives in the performance of their duty, were, thanks to Coles, given the equipment necessary to put their efforts on the highest plane of efficiency.

I was the President in question. The incident passed wholly from my mind. Early in the fall of 1916 I came across Coles's account of his extraordinary experiences in securing with harpoon and lance the big manta, or devil-fish, of the Gulf and South Atlantic, for the American Museum. Killing devil-fish with the harpoon and the lance had always appealed to me as a fascinating sport, since as a boy I had read Elliott's account of it in his "Field Sports of South Carolina"; but nothing I had ever read approached in excitement and scientific interest Coles's really noteworthy article. He was evidently a man who, in addition to being a successful hunter of the big game of the sea, was also engrossed in their study from the standpoint of the biologist. I entered into correspondence with him. He remembered the life-saving incident which I had forgotten. The result was an invitation to me to come down the

following spring for a month's work with the harpoon and the lance off the coast of southwestern Florida.

At the last moment the German submarine campaign stirred our dulled national conscience to the point of rendering necessary a special session of Congress on April 2. I was not willing to be absent when Congress assembled, and as this would cut down the trip to a week I notified Coles that it was not worth while going. But Coles telegraphed in response that his arrangements were such that he was confident that we could make our trip successful in a week. Later he told me that if I would come as agreed—leaving New York on March 23—by "thirty-five minutes of nine" (as he phrased it) on Monday the 26th I would have killed my devil-fish. I did not believe that his optimism could be warranted. But it *was* warranted; being based on a first-hand field familiarity with the habits of the big game of the sea which we were after, and by his justified belief in the thoroughgoing nature of the preparations that he had made, and in the efficiency of the trained men upon whom he relied and whom he had brought together for the expedition. It is really an extraordinary thing; but exactly six minutes before the precise minute he had prophesied I struck the death-blow with the spade-lance into my first devil-fish, after having harpooned it eleven minutes before. Fifty minutes later I struck, and killed in twenty-six minutes, a larger devil-fish—indeed a devil-fish of a size which two years before scientists believed to be non-existent, and second only to the largest of which we have authentic record—that killed by Coles two years previously and now in the American Museum of Natural History, New York.

We reached Punta Gorda, Fla., at midday of March

25, 1917. That afternoon we boarded one of the Punta Gorda Fish Company's small steamboats and went down through bays and sounds to where, off the eastern side of Captiva Island, we found our camp. It was afloat, consisting of a one-room house aboard a flat scow. The boat was about fifty feet by twenty, the house occupying all except a small space at the stern and another small space at the bow. We bunked, cooked, and lived comfortably in the one room. Our party consisted of seven, all told: Coles, myself, Coles's private secretary, A. A. Rice from Danville, and the four veteran companions of his previous expeditions who were to help us in actual chase of the devil-fish.

These four men, who composed the actual crew, were Americans of a kind that we like to regard as typical—the type welcome to the soul that has become heart-sick over the moral degeneracy implied in the decadent sentimentality of professional pacificism and the revolting and sordid grossness of its ally materialism. All four were professional fishermen, averaging fifty years of age. They were alert, weather-beaten men who all their lives long had wrought their livelihood by hard and hazardous labor on the sea. They were quiet, hard-working, self-reliant, utterly fearless. They had been trained by Coles until they were as letter-perfect in harpooning devil-fish as in working their light craft in a gale. Three came from North Carolina, being natives of Morehead City. Of these, tall Captain Charley Willis had been Coles's boat companion for twelve years, was equally at home with sails and a gasolene-engine, and was a natural leader of men. He was a skilled two-handed harpooner. Little Roland Phillips had worked in Charley's crew for nearly thirty years as second in command. He was as hard as iron and as

quick as a cat, a skilled two-handed harpooner and an extraordinary lookout. Nothing on the surface of the sea escaped his eyes. He interpreted with instant sureness every swirl or stain on the water and every dim shadow beneath it. Tall, silent Mart Lewis had served under Charley for some fifteen years; he was fisherman, engineer, cook—a first-class all-around man.

Mart had originally been trained in seamanship under the fourth member of our crew, Captain Jack McCann, who was born on the south Florida keys. He was a little man, quiet-mannered and steel-eyed, whose reputation was that of being gentle with all well-behaved people and dangerous to all others. For over thirty years he has fished along the Gulf and South Atlantic coasts, usually beginning the season with a crew of raw men and boys whom at the end of the season he has turned into finished fishermen. There are hundreds of high-class native fishermen scattered along a thousand miles of coast-line who owe their original training to Captain Jack. At least half of the men whom Coles has had in his crews at Morehead City during the last twenty years were trained by Captain Jack. In addition to being a veteran professional fisherman he possessed an excellent working knowledge of the botany and conchology of south Florida, always mentioning the different plants and shell-fish by their scientific names. Fish he looked upon as a purely commercial proposition, but he was a keen and accurate observer, and was able to give information of value about the life histories of the creatures of the deep.

It would not have been possible to find four better men for their work, nor four better companions, from every standpoint, for an outing of this character.

The morning after we arrived the cook was stirring

at dawn. Soon after sunrise we started in the heavy launch for the devil-fish ground. Roland stood forward as lookout, Captain Jack steered, Charley was working on the harpoons, Mart ran the engine, while Coles and I had nothing to do until we sighted the devil-fish. We were all dressed alike, for rough work in warm weather —thin, durable blue shirts and trousers, and broad-brimmed cabbage-palm hats.

We had a half-dozen harpoons with us. (By the way, "harpoon" is a term not used by those who use the weapon itself—it is called the "iron.") The harpoon consists of a wooden handle about eight feet long, the head being of the finest steel, with a long shank of very soft malleable iron. The head, or "shackle-iron," is fastened to the end of the iron shank by a fine steel pin on which it pivots freely; being kept in place during the thrust by a wooden pin the size of a match thrust through a small hole, and fastening the rear of the steel head to the iron shank. When thrust into as huge and tough a creature as the devil-fish the harpoon, if properly hurled, drives deep into the body; the plunge of the stricken monster puts such a strain on the barbed head as to break the wooden pin; and the whole head, which is eight inches long, pivots until it is transverse to the shank, when, of course, it will endure a tremendous strain before drawing out. The rush of the fish bends the tough, malleable iron shank, which is loosely fixed to the handle by a rope. The handle usually comes loose during the fight and as a matter of fact is often smashed. The rope may be run through a groove (or with a thoroughly trained crew through the bow-ring), or it may have at its end a drogue, which is tossed overboard. This drogue consists of a thick, square board, with a stick through the middle, to one end of which

the rope is attached, so that the flat board offers the maximum resistance to the water. Dragged at the end of a thirty or forty foot rope the drogue so hampers and retards the quarry that after a while it can be picked up. For the killing a lance is the weapon. Of lances we had in the launch three, one of which was an ordinary whale-lance, which we did not use, and the others spade-lances made for Coles, on his design, by a New Bedford whaling-smith who also made his irons for him.

Excepting myself every man aboard the boat was a veteran, knowing exactly what to do and how to do it, never getting flustered and meeting every emergency with cool readiness. To men of experience it is hardly necessary to say that in this type of expedition there is almost as much need of efficient preparedness in advance as there is in war itself. There is, of course, a big element of luck; but this element is minimized if the organizer of the expedition knows by long field study the habits of the dangerous game of the sea, if he has organized and trained a group of hardy, fearless, and resourceful men for the actual work of the chase and the fight, and if he has provided in advance for those details—in weapons and in management—which it is so easy to overlook.

Our floating camp was moored on the eastern side of long, narrow Captiva Island, directly west of which lies the Mexican Gulf. There is only a little tide here—about eighteen inches or so—but this is quite enough in the shoal waters of the bays to make a real difference in ease of navigation. Our motor-boat chugged southward through a narrow, winding passage between bright-green banks. Palmettos, and graceful cocoanut-palms with fronds which waved ceaselessly,

broke the thick growth of the mangroves which came down into the water. The number and tameness of the big birds showed what protection has done for the bird life of Florida of recent years. The plumed lesser blue herons, and more rarely the great blue heron and the lovely plumed white egret, perched in the trees or flapped across ahead of the boat. Shore-birds ran along the beaches. Parties of big terns bleated and creaked as they flew overhead. Once or twice we saw parties of small gulls with black bills. But much the most noticeable birds were the pelicans. They swam in mid-stream, they stood in flocks on the sand-bars, and they perched on the dead snags. They seemed to be abroad at all hours of the day and night. Parties of them flew by with their necks folded back like herons, not stretched out like cranes; they would all beat their wings regularly for several seconds and then for several seconds glide with their wings motionless. They showed little fear and often swam by the boat within easy gunshot; and their size and quaint ungainliness and distinctive individuality made them features of real attraction in the landscape.

Oysters grew in clusters on the rope-like branch-roots of the mangrove—these queer, water-loving trees send down pendent streamers from the branches which touch the water and then take root in the mud beneath. The mangroves are peculiar in more than one way; for, unlike most water-loving trees, their wood is hard and dense and not only makes excellent fuel but can be left under water for long periods without impairing its usefulness for the fire.

Here and there we passed houses where the forest had been cleared, and the saw-palm—the Sabal palm—grubbed out of the soil, and plantations of oranges and

grapefruit grown. When we walked through them the air was heavy with the fragrance of their blossoms. Interspersed among them were other fruits even more typically tropical—the sappodilla, the papaw, limes, and rough lemons. One house was picturesque. It stood at the water's edge behind a great Florida fig-tree, while to one side stretched a row of the beautiful ever-fruitful cocoanut-palms, the palms that bear all the year round.

Through these scenes, delightful in their strangeness and in their beauty, the boat went forward until we struck the main channel, Boca Ciego, the "hidden mouth." It is thus called because where it enters the Gulf the opening can hardly be made out from a distance of half a mile; for the sandy southern point of Captiva Island overlaps the end of its eastern neighbor Sanibel Island. Locally this is known as Blind Pass; the name Boca Ciego is a survival from the days of the pirates of the Spanish Main.

Out from Blind Pass went the launch, jumping in the short rollers on the bar and then turning northward into the wind-rippled Mexican Gulf. The breeze was light, the sky was glorious overhead, and as the sun rose higher the white radiance was blinding. The tepid waters teemed with life. The dark shadow-like places on the surface marked where schools of fish swam underneath; and to the trained eyes of the professional fishermen in our boat differences that were to me utterly indistinguishable, differences that I could not see even when pointed out, enabled them to tell the species of the fish beneath. Pompano, the most delicious of all food fishes, skipped like silver flashes through the air. Here and there porpoises rolled by.

Suddenly Roland, standing on the bow, pointed

ahead, and immediately afterward the rest of us also saw the devil-fish. It was half a mile off, swimming rather slowly through the water, so near the surface that now and then its glistening black mass appeared for a moment above. The huge bat-like wings flapped steadily; occasionally the point of one was thrust into the air. Roland slipped back and I clambered up in his place, while Coles stood beside me, each of us with a harpoon. I was to throw the harpoon to which the drogue was attached, he the harpoon to which the rope led out through the bow-ring. We stood on the balls of our feet with our knees flexed, taking the movement of the boat. The harpoon was poised in my right hand, which also held a single loop of the rope. Before making the cast I glanced down to see that the rope was not entangled in my feet and would run overboard freely. I steadied myself by gripping the painter, so that I could exert all my strength when I used the harpoon; for I threw with one hand, although the ordinary practice and doubtless ordinarily the best practice, is to hurl with both hands.

However, this particular devil-fish was not destined to be mine. He was travelling rather fast, about four feet under water, coming toward us. I missed him—darting behind him—not having allowed for the speed with which the boat and the fish were travelling in opposite directions. Of course a skilled harpooner would have hit him.

There was scant time to mourn, however, for it soon became evident that we had struck a lucky day. We saw four or five of the great sea brutes on the surface ahead and to one side of us. These were not travelling; they were lying or moving slowly, almost on top of the water, occasionally throwing one wing above it. First

rapidly and then slowly the launch surged through the light waves toward one of the strange water monsters—the survivors of a long-vanished elder world, for these devil-fish belong among the fishes which at one time, a myriad ages ago, in the dim and shrouded earliest Mesozoic past, were the highest forms of life on the globe.

The black bulk of the manta was a couple of feet below the surface. It was swimming slowly away as the launch, its bow gently rising and falling, came within striking distance. "Iron him, colonel," said Captain Charley. This time I threw true, the iron going deep into the middle of the great body; and instantly afterward Coles fastened it with another iron, calling aloud that the time was just eight minutes past eight. With a tremendous flurry and a great gush of dark blood the devil-fish plunged below and ahead, the drogue spinning along behind him, while the rope of the other harpoon ran like lightning through the ring. Our launch was heavy and the drogue by itself was a terribly hampering obstacle; yet the big fish towed us half a mile to windward before we began to haul in on him. Then we got the drogue aboard and with the two ropes we speedily brought him up near enough the bow for me to dart the big spade-headed lance into him; and the death flurry began as I struck him the second time with the lance. Everything had been quiet and businesslike up to this moment, but as the great fish was drawn alongside and securely gaffed we shouted with exultation and Coles called out that the time was "eight-nineteen." The fight had only lasted eleven minutes. Yet it was remarkable that it should have lasted as long, for, as we afterward found, my first harpoon had been driven into the body two feet and four inches, through

tough hide, flesh, and bone, and had passed through the upper part of the heart. The iron had been bent into a complete semicircle by the furious struggles of the mortally wounded fish.

Our prize was an adult male of fair but not extraordinary size. One of the others we had seen seemed larger, and we wished to get after it as soon as possible. Accordingly we headed the launch for the beach half a mile away, shoving our dead quarry before us. As soon as we reached the beach we jumped overboard, hauled the devil-fish far enough up to be confident that it would not be swept away by the tide, pushed off again, and ten minutes afterward were in sight of another devil-fish.

This was a bigger one. It was swimming head on toward the boat, two or three feet below the water. The grotesque black form flapped slowly, the horns were thrust forward; I struck it in the centre of the body almost in the exact spot that I had struck the first, and was drenched by the volume of water cast up by the great wing-fins. Coles also made fast and the fish ran off sideways, pulled the boat around while it careened heavily, and towed us briskly out to sea against the wind. Although the blood left a dark wake, it swam very strongly and some minutes elapsed before we got the drogue inboard. It was lucky we did so, for shortly afterward Coles's iron pulled out. We now had only one iron in; so, bringing the rope home, we brought the boat close enough up to the monstrous creature for me to iron it again. This time the flurry was tremendous and we were drenched with water. We were in a heavy thirty-foot, five-ton launch; yet the devil-fish, passing under us and rising, lifted the stern a foot or more upward, and then, sounding, pulled the

bow a couple of feet down; and for some little time it actually hauled the launch backward. Then it came to the surface again and towed us in a long three-quarter circle. We began to haul in on both ropes. At last it was near enough for me to dart the lance. As the wicked spade-head drove into its life the huge fish flapped and splashed with such vigor for a few seconds that I drove the lance into it twice again. Then its struggles ceased and once more we yelled as we brought the great carcass alongside for the gaff. The fight had lasted twenty-six minutes and the devil-fish had towed us over two miles, and had left throughout the entire two miles a broad wake of blood. There had been no hitch in the handling of the ropes, which is one of the danger-points in such a fight.

This devil-fish was a female, although much larger than the male. We drew both together up on the beach. The first had a breadth of thirteen feet two inches from tip to tip and the second a breadth of sixteen feet eight inches—flat measurements—not taken across the curve of the body. As far as I know, Coles's devil-fish, now mounted in the American Museum of Natural History, which was eighteen feet two inches from tip to tip, is the only captured individual of which we have authentic record that was larger. Doubtless larger ones have been captured, and there may be records of which I do not know. There are certainly devil-fish with considerably more than twenty-feet spread; but we have hitherto no authentic record of the capture of one of these exceptionally large animals.

The stomachs of these devil-fish contained such completely digested liquid animal remains that we were unable to determine what they had been feeding on. This was a real disappointment, as there had been much

discussion about the food of the big creatures. On the first devil-fish were half a dozen small remora, from ten to fourteen inches long. They were slim, striped, active fish, which attached themselves to the body of their huge host by the flat, oval sucking cusp on top of the head. These fish similarly attach themselves to sharks, sawfishes, and turtles, offering as curious an example of parasitism as is found among vertebrates.

There were still devil-fish in sight, lying on the surface of the water and offering chances such as Coles said he had never in all his previous experience witnessed. However, I did not care to kill any more of the huge, rare creatures. I much regretted that the two which were drawn up on the beach could not have been saved for scientific purposes, as they were unusually perfect specimens, both male and female, and as there is in the museums of the world but one specimen—the one killed by Coles previously mentioned—which is larger than my largest. We had offered the National Museum at Washington to get them not only specimens of this great devil-fish but also of anything else that we obtained on the expedition, if they would send a taxidermist with us. But they notified us that they were unable to accept the offer. Therefore we did not make the full collections we otherwise would have made.

On a subsequent day—to settle some questions which we had been discussing—we decided to kill another manta; but our experiences this day made us realize how fortunate we had been on our first day. We did not decide to attempt the capture of the devil-fish until so late that we lacked our full equipment of harpoons in the launch. The water was rather rough. We saw only one rather small devil-fish, which was travelling

fast; we lost sight of it on two or three occasions, and had a long chase before we finally overtook it. After first missing it I succeeded in ironing it; whereupon it jumped partly out of the water, making an awkward, sidewise, whirling leap, with a tremendous splash. Two-thirds of its body appeared above the surface. After letting it tow us for a quarter of an hour I hauled in on the rope until it was close up to the boat. We ought to have ironed it again; but there were no harpoons ready; and with a sudden twist and jerk my iron tore loose, although it was firmly fixed. The devil-fish lay for a couple of minutes not far away before it once more started off at speed, its wings flopping so that it looked as if it was flying through the water instead of swimming in conventional fish fashion. On overtaking it again Roland ironed it. He struck two-handed with such force that not only all the iron but a foot of the wooden pole entered the devil-fish just back of the brain. The fish made a tremendous flurry, smashing into the boat with sufficient force to have wrecked a smaller launch, and then passed astern. The rope did not play out freely, and as the boat had not lost its headway and was forging onward when the strain came, just as the devil-fish was astern of us, this iron also pulled out. When it did so it must have inflicted a mortal wound, probably severing the back-bone, for the fish sank. As it never again appeared, it doubtless lay dead at the bottom.

We had paid the proper penalty for not having prepared in advance. This devil-fish was considerably smaller than either of the ones we had killed the previous day. But on the previous day we had prepared, and had safeguarded ourselves in advance against every untoward chance; whereas with this smaller

devil-fish we had shown a lack of forethought in preparation rather painfully suggestive of the national attitude in dealing with more serious enemies than devil-fish.

The first two fish had been ironed at the beginning in a vital spot, so that they did not show the formidable fighting powers which these fish so often do show when the first iron does not itself weaken their vital force. If either of them had been ironed farther away from the vitals, and had then been treated as carelessly as we treated the last one, we should doubtless not have obtained either, and might have met with some rather unpleasant incident.

Coles's experiences in the past had been in a somewhat smaller launch than the one we were this time using and had therefore been more exciting. On one occasion, after ironing a big female, her mate hung about and the boat was in some peril because of the rushes of the two great creatures. One of the members of his crew at the time was a Florida fisherman, a hard-bit man, entirely new to the work but possessed of a game soul. The launch listed heavily as one of the devil-fish rose under it while they were fast to the other. Thereupon the new man called out with grim jocularity: "Iron the big bull and let us all go to hell in tow of a team of devils!"

The extraordinary shape, huge size, and vast power of the big devil-fish, or manta, give him an evil reputation, which is heightened by his black coloring. A queer peculiarity of this coloring is that the black pigment comes off on anything touching it. Kneeling on one of the devil-fish when it was drawn up on the sand I arose with my knee completely blackened. The skin is not only very tough, but is also very rough, being

covered, like that of an old shark, with dermal denticles which scarify the skin if a naked arm or leg is drawn across it. The big mouth is practically toothless, entirely so as regards the upper jaw, while the lower jaw has a small dental plate which differs in the two sexes. In spite of its size the manta is in no way dangerous to man unless attacked; but when harpooned its furious energy, tenacity of life, and enormous strength render it formidable; for it can easily smash or overturn a boat which is clumsily handled, and if the ropes foul an accident is apt to occur.*

Some months before our visit there had been a strange phenomenon, possibly due to some subterranean volcanic outburst rolling in from the Gulf; the water grew poisonous, killing enormous multitudes of fish and shell-fish. There had been time for only a partial recovery. Whether owing to this or to other causes sharks and skates were rarely seen, the few sharks being little bits of fellows. One skate was grained by Roland. When taken aboard it was found to weigh one hundred pounds. Its tail had been cut off by some previous fisherman so as to get rid of the sting. The fishermen hold the sting-ray in more dread than any other fish, and kill or cut the tail off of every specimen they catch. The spine is a weapon of defense, employed by the fish when angered or frightened.

* In the *American Museum Journal*, of April, 1916, will be found Mr. Coles's account of some of his experiences in harpooning devil-fish. The experiences were of extraordinary interest and they are related with extraordinary vividness and accuracy. In addition to harpooning devil-fish Mr. Coles has for years harpooned sharks of every size under all kinds of conditions, and has also harpooned sawfish. He is a trained scientific observer who, for example, has determined for the first time the presence on our coasts of more than one species of shark, and of the smaller devil-fish—the Mobula. He is also a sportsman whose experience in this kind of sport has been literally unexampled in range and variety. It is very greatly to be wished that he would write a volume of his experiences with "The Dangerous Game of the Sea."

Coles, Captain Jack, Roland, and Captain Charley have been struck by sting-rays. In the case of Captain Jack, the sting was driven through the rear end of his foot from side to side, pinning the shoe to the flesh and bone. In the case of Roland it was driven through the thickest part of the calf of the leg. Captain Charley had a sting driven clean through his heel. Coles was struck in the thigh, the spine being driven in to the bone. All four men agreed that they never suffered such pain. Apparently this sting or spine is an irritant of the utmost violence, although examination has so far failed to reveal any poison in connection with it. Captain Jack had known one man who died as the result of a blow from the sting-ray. Still more remarkable is what happens in connection with sharks. These fish are singularly callous to pain and indifferent to injuries. They habitually prey on sting-rays, seizing them by the head or side. Yet when sharks and sting-rays, as some time occurs, are gathered together in a fisherman's net, numbers of the sharks are killed by the sting-rays, which lash right and left; and the sharks show every symptom of great agony.

All of the trained and experienced observers with me agreed in saying that near our coast-line there was but little danger from sharks for a man swimming. Accidents do occur, but they are wholly exceptional—unlike what is true in the Indian Ocean and around Australia. The white shark is undoubtedly a man-eater, and Coles, who is probably more competent to pass judgment on the question than any other man in the United States, believes that the four bathers killed and partly eaten off the New Jersey coast in the summer of 1916 were all victims of one rather small straggler of this formidable species. When this strag-

gler was captured it was found that there were human bones and flesh in it, and with its capture all attacks on swimmers ceased. Coles believes that under exceptional circumstances the leopard or tiger shark may also attack men. None of my companions, however, had personal knowledge of any man being killed by sharks, although Coles had for years made a practice of investigating all stories of fatalities of this kind alleged to have occurred at some near-by point. All of my companions, however, knew of instances where men had been bitten by sharks which they had handled carelessly when caught in nets. Captain Jack had once been bitten by a Moray eel, which is undoubtedly a savage creature. On another occasion, when out at night in his fishing-smack, having made an immense haul of fish, a large number of big sharks attacked the fish with such ravenous ferocity that he grew seriously concerned lest they should actually force their way into the boat, and was finally obliged to cut the net adrift before he had taken half of the fish out of it.

All of my companions agreed that, for some reason, sharks were afraid of porpoises. The killer whale preyed on porpoises, seeming to prefer warm-blooded prey; but one of my companions mentioned an instance where a killer attacked and slew a big shark, and they agreed that sharks gave the killer a wide berth. The adroitness with which sharks prey on formidable creatures like sting-rays, seizing them so as almost invariably to avoid the sting, is paralleled by the mathematical nicety with which porpoises seize "crucifixion cats," so as just to avoid the spines which make these gregarious sea-catfish so dangerous to handle. The spines stick out from the pectoral fins, and render it

well-nigh fatal for anything that attempts to swallow them whole. But porpoises attack their schools at full speed, and with such precision that every catfish is cut through just behind the pectorals. All of my companions, including Coles, had at various times come across the wake of a party of porpoises which had assailed a school of crucifixion cats, and they described the sea as being, on each occasion, covered with the fore parts of the cats, each fish having lost all of its body back of the pectoral fins. The unerring, the automaton-like accuracy with which the feat was performed resembled the unerring automatism with which a hunting-wasp paralyzes its victims by stinging them in precisely the right nerve ganglion.

One day we visited an island game refuge which had been established as such when I was President, on the initiative of the Audubon Society. It was locally known as Hemp Island, but I think on the maps it appears as Cayatuna Island. It is fringed by a dense growth of mangroves, while various trees, including wild figs and native papaws and wild, native cotton-bushes, grow on the hillock which forms the centre. The birds were chiefly cormorants, pelicans, and Louisiana herons. All were nesting in the trees, and we found several heron eggs, so they had evidently begun to lay. The pelicans were the most numerous and the most conspicuous. To me they are always interesting and amusing birds, and I never get over the feeling of the unexpected about them; their size, shape, and relationship seem at variance both with their habit of diving headlong into the water like kingfishes and with their habit of perching in trees and nest-building therein. As we stood on the island many of the pelicans, soaring overhead, were carrying branches in their bills, and as they grew ac-

customed to our presence they lit with awkward flapping and balancing in the tree-tops and added sticks to the nests they were building. I believe that on the east coast of Florida they build on the ground instead of in the trees. They uttered queer hoarse croaks of protest as they left their nesting sites. When on the fishing-grounds they swung around in circles overhead and came down into the water with a splash, disappearing bodily. When they reappeared their heads were pointing up-wind, although they had dived down-wind. They and the cormorants often sat on the spiles driven here and there in the broad, shallow bay.

Among the mangroves on this island were some small diamond-back terrapin, of which we got three for our supper. A more interesting capture was made on the hillock in the centre of the island. We found a hole obviously made by some living creature which Captain Jack at once pronounced to be one of the big Florida land-turtles. The burrow was shallow and we experienced little difficulty in digging out the turtle—the first of its kind I had ever seen. This specimen weighed over eleven pounds and was a regular land-tortoise; although the plastron did not shut up tight, as in the case of the box-turtle. The species is purely a vegetable feeder and its meat is esteemed a great delicacy—we found it very good. In Florida it is called the gopher—a name reserved in the West for the burrowing pouched rat which in Florida is most inappropriately called the salamander. Captain Jack stated that he had once found one of these big land-turtles in the belly of a large diamond-back rattlesnake, which was a surprise to me, as I had supposed that the rattlesnake ate only birds and mammals.

On another island we found colonies of cormorants

and of beautiful white ibises, together with Louisiana and little blue herons. The ibises had built nests but had not begun to lay. In some of the cormorant nests there were well-grown young and the old birds made guttural noises of indignation at our approach. Under one tree, on the ground, we found a scraped hollow in the dead leaves, in which were an egg and a newly hatched chick which seemingly belonged to a small black vulture which was perched overhead. The egg was greenish, speckled with brown, and the fluffy feathers of the noisome fledgling harmonized exactly in color with the brown leaves.

We had beautiful weather. From the western side of Captiva Island the sunsets were wonderful, across the Mexican Gulf. There was a growing moon and the nights were very lovely. The soft, warm water lapped against the side of the boat, while the soft, warm night air was radiant in the moonlight.

It was a thoroughly enjoyable trip. My success was, of course, entirely owing to the masterly efficiency of my host and of his four fine sailormen and killers of the big game of the seas. It was a delight to witness the cool, unhurried sureness of decision and power with which they met every labor, every emergency, and every hazard. It was an even keener delight to feel that they were my fellow Americans, and to know that the Americanism which they represented and typified was still a living force in the nation.

RANCH LIFE AND THE HUNTING TRAIL

BIBLIOGRAPHICAL NOTE

RANCH LIFE AND THE HUNTING TRAIL. By Theodore Roosevelt, author of "Hunting Trips of a Ranchman," President of the Boone and Crockett Club of New York, Honorary Member of the London Alpine Club, etc., etc. Illustrated by Frederic Remington. New York: The Century Co., 1888.

x, 186 *pp., illus., 4to, tan buckram, large paper.*

Chapter XI appears here for the first time; the other eleven chapters were first published in the *Century Magazine*, February, March, April, May, June, and October, 1888, and are here reprinted in rearranged form, with a few changes and additions. This volume has the distinction of being the only one of Roosevelt's works wholly illustrated by Frederic Remington.

THE YOUNG ROOSEVELT*

By Owen Wister

It was the sight of a dead seal in a Broadway market which set Theodore Roosevelt to writing books. He paid several visits to the animal, whose dimensions he took somewhat disadvantageously with a folding pocket foot-rule, an instrument which he found but indifferently adapted to measuring girth. In the end he obtained the skull of the seal, and began a treatise. The trophy made the first specimen in the Roosevelt Museum of Natural History, an institution which he then founded with two of his cousins. The work on seals was presently followed by one about ants, and by further studies in the same line. These contributions to science remained in manuscript. When he made them their author was perhaps eight years old, and his spelling corresponded to his age.

Ten and twelve years later, his next two writings got as far as to be privately printed. They described some birds in the Adirondacks and at Oyster Bay. At that time he expected to follow science as a career, and in this he had his father's approval, provided his labors were serious; but at Harvard the character of the courses, which for his bent were too much confined to the laboratory and the microscope and dealt too little with out-of-doors observation, turned him away from science, and he took up history. During his later years at Harvard he wrote some chapters which he calls "so dry that they would have made a dictionary seem light

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reading by comparison." These were the beginning of a history of our naval war of 1812, which was published in 1882, and which marked his first appearance as an author; his first appearance in politics had already been made.

He was now two years out of college, was twenty-four years old, had studied law with no great enthusiasm for the standards of corporation lawyers. He was riding to hounds and falling off a horse which had originally been harnessed to buggies, but went into the hunter class in consequence of its lying down when in harness and jumping a fence when out of it. He had twice been elected a member of the New York Assembly, and the word reform was associated with his name. During the year that his "Naval War" was published, he made a journey to the West. In the year following, 1883, he got his ranch in Dakota. Dakota, and what Dakota meant then, was (save in mere arithmetical chronology) as far away from these present times as is the naval war of 1812. The Northern Pacific Railway was a new thing; the Great Northern did not exist; neither the Northwestern nor the St. Paul had stretched their long arms into that part of the country; the Burlington had yet to make its appearance there; south of the Northern Pacific to the Union Pacific spread a broad gap of empty land unveined by railways, where roads and telegraphs were few and far between, where telephones had not yet come, or the wire fence; scarce any fences were to be seen for a thousand miles, save here and there a wooden one around some man's little house or some man's little grave. The Indian, it is true, had almost ceased from troubling, and the buffalo was almost at rest; but nothing had as yet driven the antelope from the plains, or

the elk and the deer from the mountains; and in that year, 1883, an American's thoughts and mood were far more akin to his grandfather's of 1812 than to his grandson's in the swirl that spins without directing us in this year of 1923.

Out of Dakota sprang Theodore Roosevelt's next book, in 1885, and he called it "The Hunting Trips of a Ranchman." Not dead seals, but living wild animals, are its main theme; and it follows logically in the steps of the early work on seals, it is of the same family; but now grown up, it wears the natural history aspect of its author's adventurous intelligence. Its successor steps across to the other chief alcove of his mind, the political-historical shelf. Thomas Hart Benton was the subject. Benton was widely known once as "Old Bullion," because of his insistence upon "hard money" in the days of Andrew Jackson. His broad pioneering outlook westward, his loyalty to the Union, though a Southerner, his opposition to the encroachments of slavery, his honorable eclipse politically through sticking to his beliefs, and his important political books written when his life of action was over, all make a bold, upstanding character of the very sort to appeal to Roosevelt.

Such were the various predecessors of this work, and contemporary with it was a volume of "Essays on Practical Politics," published in the same year, 1888. These chapters of "Ranch Life and the Hunting Trail" appeared as a series of articles in the *Century Magazine*, and certain passages in them recur in the fourth chapter of the "Autobiography."

From his boyish start with the treatises on animals, insects, and birds, to the year 1888, when his third and fourth regularly published volumes appeared, Theodore Roosevelt's chief interests may be fairly said to take

turn about in what he wrote; his attention is clearly seen to swing almost evenly between the two persisting alternative fields. First it will be the fish-crow or the Ipswich sparrow, observed and obtained at Oyster Bay; next, Commodore Perry and his victory; next, big game in the Rockies; then, a historic statesman; then, cowboys and the wapiti or round-horned elk; and straight on top of that, some political essays based on personal experience. It is like a pile of literary sandwiches—and how completely of the same pattern with the later man, the man at the end of his second twenty-five years of life, who on one day was taking away London's breath at Guildhall with a speech about British foreign policy in the East, and a few days later was counting the different birds on a walk through the New Forest with Sir Edward Grey!

What that alert and vivacious mind was planning for the future, as he rode among the bluffs of the Little Missouri in the middle eighties, is not anywhere plainly set down. Indeed, he has not set it down at all, and possibly he was planning nothing very consciously. Might he have swung wholly to the woodcraft alternative, left statecraft behind, and become an explorer, roaming ceaselessly into the remote nooks of the globe? Would a call just then to go on a journey to find the South Pole, or to ascend Mount Everest, have sealed the dedication of his life to the wilds? Possibly, not probably; even in this early book it looks as if his heart and brain were fast anchored in his country, however far his fancy might gallop on a romp with hobbies. At any rate, the external call came from the other direction, and if his career was not already settled by the decree of the invisible gods, it was definitely decided by President Harrison, who in the year 1889 appointed him Civil Service

Commissioner. Thenceforth the alternations of natural history and history disappear, the literary sandwiches cease to be made, and the publications swing to the statecraft side. Not that the hobbies were ever forsaken; birds, beasts, hunting, literature, never ceased to nourish and recreate him, and nothing more distinguishes Theodore Roosevelt from our other Presidents than the number and excellence of his hobbies, and the robust vigor with which he rode them. The name of Jefferson occurs in this connection; but Jefferson's hobbies hardly nourished him as did Theodore Roosevelt's; they were agreeable, scholarly, ornamental, but for the most part sterile in constructive practical suggestion, with the noble exception of the University of Virginia. From none of them did he derive any policy of supreme value to the nation in the way that Roosevelt's ranch and hunting life prepared him for his policy of conservation. Our Presidents usually have to rely upon hearsay for their Western information, they must take the word of a Congressman from Wyoming or some other State; Roosevelt needed nothing of this sort; he had been there often and observantly, and he decided and acted upon his own knowledge.

This book is to be classed as the product of a hobby, energetically ridden as usual. Ecclesiastes advises us: "Whatsoever thy hand findeth to do, do it with thy might." No text was more preached through practice by Roosevelt, and during those years of the middle eighties he was unquestionably ranching with his might. Whatever work the men did he did too, roughing it with them; and the zest of his prose makes plain his complete participation and enjoyment of the life. He flung himself into it with that whole-heartedness and full-mindedness with which he entered upon anything which he

thought worth while—a public question, the troubles of a friend, a new book of importance whether prose or verse, history or fiction. Have we had any President more lavish of himself to good ends? Did the people that he saw in Dakota suppose that he was to be a cattleman forever? He does not record what he said about this to his near associates, those fast friends whom he made then, and who stood with him and by him during many a crisis of his subsequent career; but any one who met him on the Little Missouri might very justifiably have assumed that cattle-raising was to be his life-work. Not so, however, any one who reads the pages of this volume, written during the full swing of his ranch activities. However much he was enjoying that free muscular existence, he was perfectly aware that the epoch of the range was but a brief episode in the history of the United States, and that its doom was already at hand. At the close of the second chapter he writes:

"The best days of ranching are over . . . the great free ranches . . . mark a primitive stage of existence as surely as do the great tracts of primeval forests, and like the latter must pass away before the onward march of our people; and we who have felt the charm of the life, and have exulted in its abounding vigor and its bold, restless freedom, will not only regret its passing for our own sakes, but must also feel real sorrow that those who come after us are not to see, as we have seen, what is perhaps the pleasantest, healthiest, and most exciting phase of American existence."

For his own sake he undoubtedly regretted the passing of the frontier, missed its presence in our national life, never forgot its haunting spell. The hold which it had upon him showed in the special feeling and cordiality with which he always welcomed the friends whom it

had brought him, and also in his frequent returns to what was left of it when he took holidays in his middle years.

The Dakota chapter may be said to mark the close of his youth; not spiritually; in that sense he was boy perpetual; it flashed out in him to the end. Not illness, not grief, neither fatigue nor chagrin could penetrate to this central place in him, although they could and did draw lines on his face, weaken his body, and at times darken the blazing cheerfulness of his mood and mind. But after Dakota and that appointment as Civil Service Commissioner the middle years set in, the trail leads away from birds and forests to the White House.

What was he like when he had come thus far; what had befallen him in his first quarter-century? His elders are now gone, his contemporaries are going, Robert Bacon and others that knew him well then are no longer here to recall him to us. Some of the photographs are very like. It is to be seen that he was slim. His undergraduate side-whiskers had disappeared, a slighter mustache than that of a later time allowed a mouth to be visible which was already noticeably firm, but not yet grim; thick hair grew over a brow that was still serene; the eyes were steady, and the twinkle in them had less of the spark of defiance that later came so often. The face had the leanness of a youth in his twenties. What was entirely like the later man was his talk: its eagerness, its point, its obvious flow from a source of wide reading, its humorous twists, its hard-hammered cadences. His art in the telling phrase—"race suicide," "muck-rakers," "submerged majority," "waging peace"—had not yet come to its maturity; but the word "precisely" (with a flash of teeth to go with it)

when he was intending to be a little unpleasant, had already come into his vocabulary to stay. And the fashion of his collar, turned down, rather wide apart at the stud, with the rather flat sailor-knotted tie filling the gap, was established. The collar he wore in the White House, and after, was of the same model as that which he wore when he was a member of the New York Assembly.

And what had befallen him? More than the average of experience which an American of his kind usually has had at the age of twenty-five. Some ill health, fought to a finish; much outdoor life; much general reading; school and college; an early sight of Europe, which he speaks of as doing nothing for him. But in this he may be mistaken. Nobody knows how far it may not have prepared him for those later journeys in the Old World. These, as he is expressly aware, played a very important hand in his intellectual growth and in his outlook as a statesman. He does not say so, but they (with his wide historical reading) saved him from that hurtful provincialism which makes fools of most of our public men directly they are confronted with any issue but a local one. These journeys (always with his reading) laid the foundations of the man who pushed preparedness for the Spanish War, who decided the making of the Panama Canal, who dealt with the Kaiser regarding Venezuela, who presided at the Portsmouth Conference, who was acclaimed and received the world over as no other American has ever been, and whose whole foreign policy shows more discernment than that of any other President of these United States. Very important indeed to him were those journeys in Europe. The mere detail that he had climbed some Alps better equipped him to look at the landscape and the mountains of our West

with that intelligent appreciation and discrimination which come only from the power to make comparisons. What a happy thing for our country it would be if the hundreds of thousands of Americans who go yearly to Europe . . . but why complete this sentence? Beside the above experiences, Roosevelt, when he went to Dakota, had known what it is to be a legislator, what it is to be frowned on by many members of your own class, and he had also known one supreme personal grief, and was a widower. He had yet to know in his later marriage the supreme happiness of a domestic life and relation so rare and perfect that it would become historic, save for its privacy.

One cannot predict how vivid the pages of this book will be to the reader of future years, whose eyes never looked on the West of the great ranch time; but any one who did see that West knows that Roosevelt's account of it is faithful and penetrating. Some must be living still who had ridden happily across the sage-brush themselves before these chapters began to appear as magazine articles. They must remember how glad they were that some one was at last chronicling worthily the cattle land and its highly individualized people. One such reader recalls very well how eagerly he read each article as it came out, and how impatiently he looked for the appearance of its successor. He recollects the thrill which the illustrations of Frederic Remington gave him, not omitting the tail which Remington presented to the antelope, the heated arguments raised by the statement that these animals shed their horns, the regret that no derivation of the word "maverick" was given. That memory should have retained for nearly forty years such slight details as these shows the interest which the book aroused and the minute criticism to

which it was subjected by those who were already familiar with the life that it described so vividly.

Only a civilized and enlightened observer could adequately appreciate at sight such a life, such people, such scenery; for to "see" it needed both the gift and the experience to make comparisons. To *look* at it was by no means enough. Looking at it had produced merely caricature in the way of cartoons and melodrama. Alkali Ike had made his appearance in our comic papers, and that was about as far as it had gone. It was a very different eye and understanding that saw the cowboy and wrote of him thus:

"It is utterly unfair to judge the whole class by what a few individuals do in the course of two or three days spent in town, instead of by the long months of weary, honest toil common to all alike. To appreciate properly his fine, manly qualities, the wild rough-rider of the plains should be seen in his own home. There he passes his days, there he does his life-work, there, when he meets death, he faces it as he has faced many other evils, with quiet, uncomplaining fortitude. Brave, hospitable, hardy, adventurous, he is the grim pioneer of our race; he prepares the way for the civilization from before whose face he must himself disappear. Hard and dangerous though his existence is, it has yet a wild attraction that strongly draws to it his bold, free spirit. He lives in the lonely lands where mighty rivers twist in long reaches between the barren bluffs; where the prairies stretch out into billowy plains of waving grass, girt only by the blue horizon—plains across whose endless breadth he can steer his course for days and weeks and see neither man to speak to nor hill to break the level; where the glory and the burning splendor of the sunsets kindle the blue vault of heaven and the level

brown earth till they merge together in an ocean of flaming fire."

Nothing that Alkali Ike ever did or said suggests anything like this.

And again:

"The moral tone of a cow camp, indeed, is rather high than otherwise. Meanness, cowardice, and dishonesty are not tolerated. There is a high regard for truthfulness and keeping one's word, intense contempt for any kind of hypocrisy, and a hearty dislike for a man who shirks his work. Many of the men gamble and drink, but many do neither; and the conversation is not worse than in most bodies composed wholly of male human beings. A cowboy will not submit tamely to an insult, and is ever ready to avenge his own wrongs; nor has he an overwrought fear of shedding blood. He possesses, in fact, few of the emasculated, milk-and-water moralities admired by the pseudophilanthropists; but he does possess, to a very high degree, the stern, manly qualities that are necessary to a nation."

These passages show very clearly that the future Roosevelt was already there: the observer, the maker of comparisons, with his energetic likes and dislikes, with his swift mind, at once concrete and generalizing. One may be sure that he would not have altered any opinion expressed here at any time in his later life. Action, observation, much reading, some success, and some suffering, had set the mould of the man; the middle years and those later would merely enrich its contents. And the man who would be reading "Anna Karenina" on the Little Missouri and would compare the gray tone of a clouded day to the tone of that novel, obviously had developed a taste and an insight for natural scenery, as well as for literature. Only to hear his talk, which con-

cerned itself so much with public affairs, and men, and books, one might easily not guess his feeling for nature.

"In the hot noontide hours of midsummer the broad ranch veranda, always in the shade, is almost the only spot where a man can be comfortable; but here he can sit for hours at a time, leaning back in his rocking-chair, as he reads or smokes, or with half-closed, dreamy eyes gazes across the shallow, nearly dry river-bed to the wooded bottoms opposite, and to the plateaus lying back of them. Against the sheer white faces of the cliffs, that come down without a break, the dark-green tree-tops stand out in bold relief. In the hot, lifeless air all objects that are not near by seem to sway and waver. There are few sounds to break the stillness. From the upper branches of the cottonwood-trees overhead, whose shimmering, tremulous leaves are hardly ever quiet, but if the wind stirs at all, rustle and quiver and sigh all day long, comes every now and then the soft, melancholy cooing of the mourning-dove, whose voice always seems far away. . . ."

It is a perfect picture; how perfect none can know but he who has drowsed on a ranch veranda when the noon was hot.

Again; this time about a furious storm:

". . . In front of this fan-shaped mess of frightened, maddened beasts was a long line of cowboys, each muffled in his slicker and with his broad hat pulled down over his eyes, to shield him from the pelting rain. When the cattle were quiet for a moment every horseman at once turned round with his back to the wind, and the whole line stood motionless as so many sentries. Then if the cattle tried to spread out . . . the men, shouting and swaying in their saddles, darted to and fro with reckless speed . . . now racing to the threatened point,

now checking and wheeling their horses so sharply as to bring them square on their haunches, or even throw them flat down, while the hoofs ploughed long furrows in the slippery soil. . . . The din of the thunder was terrific . . . darkness had set in, but each flash of lightning showed us a dense array of tossing horns and staring eyes. . . ."

And finally, these sentences:

"When the days have dwindled to their shortest, and the nights seem never-ending, then all the great northern plains are changed into an abode of iron and desolation. Sometimes furious gales blow out of the north, driving before them the clouds of blinding snow dust. . . . They roar in a thunderous bass as they sweep across the prairie or whirl through the naked canyons; they shiver the great brittle cottonwoods, and beneath their rough touch the icy limbs of the pines that cluster in the gorges sing like the chords of an Æolian harp. Again in the coldest midwinter weather, not a breath of wind may stir; and then the still, merciless, terrible cold that broods over the earth like the shadow of silent death seems even more dreadful in its gloomy rigor than is the lawless madness of the storms. All the land is like granite; the great rivers stand still in their beds, as if turned to frosted steel. In the long nights there is no sound to break the lifeless silence. Under the ceaseless, shifting play of the Northern Lights, or lighted only by the wintry brilliance of the stars, the snow-clad plains stretch out into dead and endless wastes of glimmering white. . . . We have to sleep under so many blankets that the weight is fairly oppressive. Outside, the shaggy ponies huddle together in the corral, while long icicles hang from their lips, and the hoarfrost whitens the hollow backs of the cattle."

It is all there, so well, so firmly drawn, that no illustrations could then have added to it, save Frederic Remington's alone. Remington saw it, he felt it, and he has set it down in his way, with the hand of genius: the bluffs, the space, the great sweep, the rider, his cattle, the red man not yet vanished into reservations, the epic gaiety and grimness which are in that world no more.

Only two writers before Roosevelt had taken the frontier West as their subject and treated it with serious appreciation and attention; but the cattle country lay outside, though against, their chosen field. Captain Charles King had been stationed at many of the frontier military posts which the necessities of that epoch had created, and he knew the various adventures which befell the officers and their families, and the enlisted men. His pictures of army life in the West record the same vanished era as do the still better tales of Mary Hallock Foote. Her experience was not so wide as Captain King's, what she knew had been gathered mainly in Idaho, at Boise Barracks, but she had a greater gift; and her story "The Cup of Trembling," as well as some others, lingers in the memory and belongs to that shelf of American fiction which has a permanent historic value.

To pick out from any of the twelve chapters of this book any particular one as emerging above the level of excellence of the others would be difficult, and is quite unnecessary. Nevertheless, since a piece of sustained and spirited narrative is a more difficult thing to write than description or comment, let the critical reader consider the eighth chapter, which tells of Roosevelt's surprise and arrest of certain shady characters who had stolen his boat in order to escape from a region which

was no longer safe for them. He and his companions with their captives went three hundred miles, chiefly down a river full of ice, camping where they could, and without much to eat, until they at last reached the town where the prisoners could be delivered to the sheriff. It was on this journey that Roosevelt took "Anna Karenina" to read, and found that it harmonized with his surroundings.

In this chapter, less of definition and explanation are to be found than in most of the others; here it was not so much needed, while elsewhere it was continually indispensable, because the ground that he was breaking was so new to readers in the East. To meet in the eighties a man who had been to Dakota, or Montana, or Wyoming, and who had seen and known the cattle country, was not at all a common thing. Apart from certain young college graduates, many of them more or less contemporaries and acquaintances of Roosevelt, scarcely any one who had lived on the range and spoken with cowboys came East. Consequently, a writer who attempted to give an account of such a remote and unknown existence was obliged, if he would make it intelligible, to explain the meaning of a quantity of words, mostly derived from the Spanish, of daily use on the range and as yet never heard at all on Atlantic shores, and to be careful to give clear descriptions of both objects and customs which were as foreign as the words. It is curious to think that such a term as "cinch," or "rough house," which have now so universally pervaded our colloquial speech, would have been incomprehensible in New York in the days when Roosevelt wrote these pages. They and their like, with the customs that went with them, made to his ceaselessly adventuring mind an appeal as instant as did the strange

new sight of the dead seal in the Broadway market twenty years before—and as any strange new sight would continue to make as long as he lived: deep in his spirit dwelt the pioneer eternal. Nothing characteristic escaped his alert appreciation, whether in the nature of cow-ponies or of their riders, and just as he explains branding, or mud-holes, or the vegetable-garden and the grasshoppers that eat it, he does not omit to tell us that "in travelling through the cow country it is often impossible to get any milk or butter," and that on his ranch they "keep hens, which in spite of the damaging inroads of hawks, bobcats, and foxes, supply us with eggs." Animals are never forgotten; he rejoices in the names of the ponies, "Dynamite Jimmy," "Wire Fence," "Hackamore," "Macaulay," "Bulberry Johnny" (he spells it with one l, but this thorny bush was pronounced with two), "Fall Back," and "Water Skip," and he gives the reasons for these names. He does not omit humbler quadrupeds:

"Of the skunks, by the way, we had last year altogether too much; there was a perfect plague of them all along the river, and they took to trying to get into the huts, with the stupid pertinacity of the species. At every ranch-house dozens were killed, we ourselves bagging thirty-three, all slain near the house, and one, to our unspeakable sorrow, in it."

The particular turn of Roosevelt's humor may be seen in many passages throughout the book, and of these the following is an excellent example:

"He was also a good-looking fellow, with honest brown eyes; but he no more knew the difference between right and wrong than Adam did before the fall. Had he been at all conscious of his wickedness, or had he possessed the least sense of shame, he would have been unbearable as

a companion; but he was so perfectly pleasant and easy, so *good-humoredly tolerant of virtue in others* [the italics are not his] and he so wholly lacked even a glimmering suspicion that murder, theft, and adultery were matters of anything more than individual taste, that I actually grew to be rather fond of him."

The book, for so short a one, is a remarkably adequate account of the cattle era; for a full historical survey of this episode in our history, from its dawn south of the Rio Grande to its passing in the nineties, the reader must go to the admirable and permanently valuable volumes of Mr. Emerson Hough and Mr. Philip Ashton Rollins, "The Story of the Cowboy," and "The Cowboy"; between them they leave nothing else for any one to do. But this book, even did it not bear the great name of its author, would hold its own, because of the wealth of its observation, the lively vigor of its style, and because it was written while the iron was still hot, when the range was still a living thing and not a romantic memory. It is only our professional critics who have failed to see that Roosevelt was an eminent writer.

He had no intention of drawing his own portrait while writing these pages. But there he stands to the life, full length, the central figure of the broad canvas. The herds of cattle are there, the wild riders, the Indians, the plains, the hills, the game. And yet, when the twelve chapters are read and finished and the volume closed, it is he, and not they, that remain in the mind's eye the most vital figure of them all. And when he went away from the cattle country to public office and to politics, he left his presence there. They never forgot him. They came to him when he called them to go with him to the Spanish War; they supported him and understood him as he understood them; they were ready to go

to France with him. Such is the mystery of personality. In his twenties this element in him was as full grown as his body and his mind. After-years could add nothing to him but knowledge and experience. His intellectual interests were matured, his power of quick decision was at his command, it was a square deal that he already gave to all comers, his hates and his loves were full-fledged. Perhaps the two profoundest revelations that still awaited him were the joys of his family life and a full sense of the despicable in man. His preliminary skirmish in politics had shown some of this to him, but he was to go on learning more of it almost to the end. He was too buoyant, and he saw the good side of men too wholesomely, to be destroyed by his darker knowledge; but it changed the morning glint of his eye and the lines of his mouth. Perhaps his enormous capacity for action did most to carry his soul along, perhaps a Horatian sentence in this book about cowboys contains the heart of his philosophy:

"Black care rarely sits behind a rider whose pace is fast enough."

Already a legend with Lincoln and Washington, he fills our silent past in the midst of our deafening present.

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RANCH LIFE AND THE HUNTING TRAIL

"Oh, our manhood's prime vigor! No spirit feels waste,
Not a muscle is stopped in its playing nor sinew unbraced.
Oh, the wild joys of living! the leaping from rock up to rock,
The strong rending of boughs from the fir-tree, the cool silver shock
Of the plunge in a pool's living water, the hunt of the bear, . . .
And the sleep in the dried river-channel where bulrushes tell
That the water was wont to go warbling so softly and well.
How good is man's life, the mere living."

BROWNING.

I

THE CATTLE COUNTRY OF THE FAR WEST

The great grazing-lands of the West lie in what is known as the arid belt, which stretches from British America on the north to Mexico on the south, through the middle of the United States. It includes New Mexico, part of Arizona, Colorado, Wyoming, Montana, and the western portion of Texas, Kansas, Nebraska, and Dakota. It must not be understood by this that more cattle are to be found here than elsewhere, for the contrary is true, it being a fact often lost sight of that the number of cattle raised on the small, thick-lying farms of the fertile Eastern States is actually many times greater than that of those scattered over the vast, barren ranches of the far West; for stock will always be most plentiful in districts where corn and other winter food can be grown. But in this arid belt, and in this arid belt only—save in a few similar tracts on the Pacific slope—stock-raising is almost the sole industry, except in the mountain districts where there is mining. The whole region is one vast stretch of grazing country, with only here and there spots of farm land, in most places there being nothing more like agriculture than is implied in the cutting of some tons of wild hay or the planting of a garden-patch for home use. This is especially true of the northern portion of the region, which comprises the basin of the upper Missouri, and with which alone

I am familiar. Here there are no fences to speak of, and all the land north of the Black Hills and the Bighorn Mountains and between the Rockies and the Dakota wheat-fields might be spoken of as one gigantic, unbroken pasture, where cowboys and branding-irons take the place of fences.

The country throughout this great upper Missouri basin has a wonderful sameness of character; and the rest of the arid belt, lying to the southward, is closely akin to it in its main features. A traveller seeing it for the first time is especially struck by its look of parched, barren desolation; he can with difficulty believe that it will support cattle at all. It is a region of light rainfall; the grass is short and comparatively scanty; there is no timber except along the beds of the streams, and in many places there are alkali deserts where nothing grows but sage-brush and cactus. Now the land stretches out into level, seemingly endless plains or into rolling prairies; again it is broken by abrupt hills and deep, winding valleys; or else it is crossed by chains of buttes, usually bare, but often clad with a dense growth of dwarfed pines or gnarled, stunted cedars. The muddy rivers run in broad, shallow beds, which after heavy rainfalls are filled to the brim by the swollen torrents, while in droughts the larger streams dwindle into sluggish trickles of clearer water and the smaller ones dry up entirely save in occasional deep pools.

All through the region, except on the great Indian reservations, there has been a scanty and sparse settlement, quite peculiar in its character. In the forest the woodchopper comes first; on the fertile prairies the granger is the pioneer; but on the long, stretching uplands of the far West it is the men who guard and

follow the horned herds that prepare the way for the settlers who come after. The high plains of the upper Missouri and its tributary rivers were first opened and are still held by the stockmen, and the whole civilization of the region has received the stamp of their marked and individual characteristics. They were from the South, not from the East, although many men from the latter region came out along the great transcontinental railway lines and joined them in their northern migration.

They were not dwellers in towns, and from the nature of their industry lived as far apart from each other as possible. In choosing new ranges, old cow-hands, who are also seasoned plainsmen, are invariably sent ahead, perhaps a year in advance, to spy out the land and pick the best places. One of these may go by himself, or more often, especially if they have to penetrate little known or entirely unknown tracts, two or three will go together, the owner or manager of the herd himself being one of them. Perhaps their herds may already be on the border of the wild and uninhabited country: in that case they may have to take but a few days' journey before finding the stretches of sheltered, long-grass land that they seek. For instance, when I wished to move my own Elkhorn steer brand on to a new ranch I had to spend barely a week in travelling north among the Little Missouri Bad Lands before finding what was then untrodden ground far outside the range of any of my neighbors' cattle. But if a large outfit is going to shift its quarters it must go much farther; and both the necessity and the chance for long wanderings were especially great when the final overthrow of the northern Horse Indians opened the whole upper Missouri basin at one sweep to the stockmen. Then the ad-

vance-guards or explorers, each on one horse and leading another with food and bedding, were often absent months at a time, threading their way through the trackless wastes of plain, plateau, and river-bottom. If possible they would choose a country that would be good for winter and summer alike; but often this could not be done, and then they would try to find a well-watered tract on which the cattle could be summered, and from which they could be driven in fall to their sheltered winter range—for the cattle in winter eat snow, and an entirely waterless region, if broken, and with good pasturage, is often the best possible winter ground, as it is sure not to have been eaten off at all during the summer; while in the bottoms the grass is always cropped down soonest. Many outfits regularly shift their herds every spring and fall; but with us in the Bad Lands all we do, when cold weather sets in, is to drive our beasts off the scantily grassed river-bottom back ten miles or more among the broken buttes and plateaus of the uplands to where the brown hay, cured on the stalk, stands thick in the winding coulées.

These lookouts or forerunners having returned, the herds are set in motion as early in the spring as may be, so as to get on the ground in time to let the travel-worn beasts rest and gain flesh before winter sets in. Each herd is accompanied by a dozen, or a score, or a couple of score, of cowboys, according to its size, and beside it rumble and jolt the heavy four-horse wagons that hold the food and bedding of the men and the few implements they will need at the end of their journey. As long as possible they follow the trails made by the herds that have already travelled in the same direction, and when these end they strike out for themselves.

In the upper Missouri basin, the pioneer herds soon had to scatter out and each find its own way among the great dreary solitudes, creeping carefully along so that the cattle should not be overdriven and should have water at the halting-places. An outfit might thus be months on its lonely journey, slowly making its way over melancholy, pathless plains, or down the valleys of the lonely rivers. It was tedious, harassing work, as the weary cattle had to be driven carefully and quietly during the day and strictly guarded at night, with a perpetual watch kept for Indians or white horse-thieves. Often they would skirt the edges of the streams for days at a time, seeking for a ford or a good swimming crossing, and if the water was up and the quicksand deep the danger to the riders was serious and the risk of loss among the cattle very great.

At last, after days of excitement and danger and after months of weary, monotonous toil, the chosen ground is reached and the final camp pitched. The footsore animals are turned loose to shift for themselves, outlying camps of two or three men each being established to hem them in. Meanwhile the primitive ranch-house, outbuildings, and corrals are built, the unhewn cottonwood logs being chinked with moss and mud, while the roofs are of branches covered with dirt, spades and axes being the only tools needed for the work. Bunks, chairs, and tables are all home-made, and as rough as the houses they are in. The supplies of coarse, rude food are carried perhaps two or three hundred miles from the nearest town, either in the ranch-wagons or else by some regular freighting outfit, the huge canvas-topped prairie-schooners of which are each drawn by several yoke of oxen, or perhaps by six or eight mules. To guard against the

numerous mishaps of prairie travel, two or three of these prairie-schooners usually go together, the brawny teamsters, known either as "bull-whackers" or as "mule-skinners," stalking beside their slow-moving teams.

The small outlying camps are often tents, or mere dugouts in the ground. But at the main ranch there will be a cluster of log buildings, including a separate cabin for the foreman or ranchman; often another in which to cook and eat; a long house for the men to sleep in; stables, sheds, a blacksmith's shop, etc.—the whole group forming quite a little settlement, with the corrals, the stacks of natural hay, and the patches of fenced land for gardens or horse pastures. This little settlement may be situated right out in the treeless, nearly level open, but much more often is placed in the partly wooded bottom of a creek or river, sheltered by the usual background of sombre brown hills.

When the northern plains began to be settled, such a ranch would at first be absolutely alone in the wilderness, but others of the same sort were sure soon to be established within twenty or thirty miles on one side or the other. The lives of the men in such places were strangely cut off from the outside world, and, indeed, the same is true to a hardly less extent at the present day. Sometimes the wagons are sent for provisions, and the beef steers are at stated times driven off for shipment. Parties of hunters and trappers call now and then. More rarely small bands of emigrants go by in search of new homes, impelled by the restless, aimless craving for change so deeply grafted in the breast of the American borderer: the white-topped wagons are loaded with domestic goods, with sallow, dispirited-looking women, and with tow-headed chil-

dren; while the gaunt, moody frontiersmen slouch alongside, rifle on shoulder, lank, homely, uncouth, and yet with a curious suggestion of grim strength underlying it all. Or cowboys from neighboring ranches will ride over, looking for lost horses or seeing if their cattle have strayed off the range. But this is all. Civilization seems as remote as if we were living in an age long past. The whole existence is patriarchal in character: it is the life of men who live in the open, who tend their herds on horseback, who go armed and ready to guard their lives by their own prowess, whose wants are very simple, and who call no man master. Ranching is an occupation like those of vigorous, primitive pastoral peoples, having little in common with the humdrum, workaday business world of the nineteenth century; and the free ranchman in his manner of life shows more kinship to an Arab sheik than to a sleek city merchant or tradesman.

By degrees the country becomes what in a stock-raising region passes for well settled. In addition to the great ranches smaller ones are established, with a few hundred, or even a few score, head of cattle apiece; and now and then miserable farmers straggle in to fight a losing and desperate battle with drought, cold, and grasshoppers. The wheels of the heavy wagons, driven always over the same course from one ranch to another, or to the remote frontier towns from which they get their goods, wear ruts in the soil, and roads are soon formed, perhaps originally following the deep trails made by the vanished buffalo. These roads lead down the river-bottoms or along the crests of the divides or else strike out fairly across the prairie, and a man may sometimes journey a hundred miles along one without coming to a house or a camp of any sort. If

they lead to a shipping-point whence the beeves are sent to market, the cattle, travelling in single file, will have worn many and deep paths on each side of the wheel-marks; and the roads between important places which are regularly used either by the United States Government, by stage-coach lines, or by freight teams become deeply worn landmarks—as, for instance, near us, the Deadwood and the old Fort Keogh trails.

Cattle-ranching can only be carried on in its present form while the population is scanty; and so in stock-raising regions, pure and simple, there are usually few towns, and these are almost always at the shipping-points for cattle. But, on the other hand, wealthy cattlemen, like miners who have done well, always spend their money freely; and accordingly towns like Denver, Cheyenne, and Helena, where these two classes are the most influential in the community, are far pleasanter places of residence than cities of five times their population in the exclusively agricultural States to the eastward.

A true "cow town" is worth seeing—such a one as Miles City, for instance, especially at the time of the annual meeting of the great Montana Stock Raisers' Association. Then the whole place is full to overflowing, the importance of the meeting and the fun of the attendant frolics, especially the horse-races, drawing from the surrounding ranch country many hundreds of men of every degree, from the rich stock-owner worth his millions to the ordinary cowboy who works for forty dollars a month. It would be impossible to imagine a more typically American assemblage, for although there are always a certain number of foreigners, usually English, Irish, or German, yet they have become completely Americanized; and on the

whole it would be difficult to gather a finer body of men, in spite of their numerous shortcomings. The ranch-owners differ more from each other than do the cowboys; and the former certainly compare very favorably with similar classes of capitalists in the East. Anything more foolish than the demagogic outcry against "cattle kings" it would be difficult to imagine. Indeed, there are very few businesses so absolutely legitimate as stock-raising and so beneficial to the nation at large; and a successful stock-grower must not only be shrewd, thrifty, patient, and enterprising, but he must also possess qualities of personal bravery, hardihood, and self-reliance to a degree not demanded in the least by any mercantile occupation in a community long settled. Stockmen are in the West the pioneers of civilization, and their daring and adventurousness make the after-settlement of the region possible. The whole country owes them a great debt.

The most successful ranchmen are those, usually Southwesterners, who have been bred to the business and have grown up with it; but many Eastern men, including not a few college graduates, have also done excellently by devoting their whole time and energy to their work—although Easterners who invest their money in cattle without knowing anything of the business or who trust all to their subordinates, are, naturally enough, likely to incur heavy losses. Stockmen are learning more and more to act together; and certainly the meetings of their associations are conducted with a dignity and good sense that would do credit to any parliamentary body.

But the cowboys resemble one another much more and outsiders much less than is the case even with their employers, the ranchmen. A town in the cattle coun-

try, when for some cause it is thronged with men from the neighborhood, always presents a picturesque sight. On the wooden sidewalks of the broad, dusty streets the men who ply the various industries known only to frontier existence jostle one another as they saunter to and fro or lounge lazily in front of the straggling, cheap-looking board houses. Hunters come in from the plains and the mountains, clad in buckskin shirts and fur caps, greasy and unkempt, but with resolute faces and sullen, watchful eyes, that are ever on the alert. The teamsters, surly and self-contained, wear slouch-hats and great cowhide boots; while the stage-drivers, their faces seamed by the hardship and exposure of their long drives with every kind of team, through every kind of country, and in every kind of weather, proud of their really wonderful skill as reinsmen and conscious of their high standing in any frontier community, look down on and sneer at the "skin-hunters" and the plodding drivers of the white-topped prairie-schooners. Besides these there are trappers, and wolfers whose business is to poison wolves, with shaggy, knock-kneed ponies to carry their small bales and bundles of furs—beaver, wolf, fox, and occasionally otter; and silent sheep-herders, with cast-down faces, never able to forget the absolute solitude and monotony of their dreary lives, nor to rid their minds of the thought of the woolly idiots they pass all their days in tending. Such are the men who have come to town, either on business or else to frequent the flaunting saloons and gaudy hells of all kinds in search of the coarse, vicious excitement that in the minds of many of them does duty as pleasure—the only form of pleasure they have ever had a chance to know. Indians too, wrapped in blankets, with stolid, emotionless

faces, stalk silently round among the whites, or join in the gambling and horse-racing. If the town is on the borders of the mountain country, there will also be sinewy lumbermen, rough-looking miners, and packers whose business it is to guide the long mule and pony trains that go where wagons cannot and whose work in packing needs special and peculiar skill; and mingled with and drawn from all these classes are desperadoes of every grade, from the gambler up through the horse-thief to the murderous professional bully, or, as he is locally called, "bad man"—now, however, a much less conspicuous object than formerly.

But everywhere among these plainsmen and mountain men, and more important than any are the cowboys—the men who follow the calling that has brought such towns into being. Singly, or in twos or threes, they gallop their wiry little horses down the street, their lithe, supple figures erect or swaying slightly as they sit loosely in the saddle; while their stirrups are so long that their knees are hardly bent, the bridles not taut enough to keep the chains from clanking. They are smaller and less muscular than the wielders of axe and pick; but they are as hardy and self-reliant as any men who ever breathed—with bronzed, set faces, and keen eyes that look all the world straight in the face without flinching as they flash out from under the broad-brimmed hats. Peril and hardship, and years of long toil broken by weeks of brutal dissipation, draw haggard lines across their eager faces, but never dim their reckless eyes nor break their bearing of defiant self-confidence. They do not walk well, partly because they so rarely do any work out of the saddle, partly because their *chaparejos* or leather overalls hamper them when on the ground; but their appear-

ance is striking for all that, and picturesque too, with their jingling spurs, the big revolvers stuck in their belts, and bright silk handkerchiefs knotted loosely round their necks over the open collars of the flannel shirts. When drunk on the villainous whiskey of the frontier towns, they cut mad antics, riding their horses into the saloons, firing their pistols right and left, from boisterous light-heartedness rather than from any viciousness, and indulging too often in deadly shooting affrays, brought on either by the accidental contact of the moment or on account of some long-standing grudge, or perhaps because of bad blood between two ranches or localities; but except while on such sprees they are quiet, rather self-contained men, perfectly frank and simple, and on their own ground treat a stranger with the most whole-souled hospitality, doing all in their power for him and scorning to take any reward in return. Although prompt to resent an injury, they are not at all apt to be rude to outsiders, treating them with what can almost be called a grave courtesy. They are much better fellows and pleasanter companions than small farmers or agricultural laborers; nor are the mechanics and workmen of a great city to be mentioned in the same breath.

The bulk of the cowboys themselves are Southwesterners; but there are also many from the Eastern and the Northern States, who, if they begin young, do quite as well as the Southerners. The best hands are fairly bred to the work and follow it from their youth up. Nothing can be more foolish than for an Easterner to think he can become a cowboy in a few months' time. Many a young fellow comes out hot with enthusiasm for life on the plains, only to learn that his clumsiness is greater than he could have believed

possible; that the cowboy business is like any other and has to be learned by serving a painful apprenticeship; and that this apprenticeship implies the endurance of rough fare, hard living, dirt, exposure of every kind, no little toil, and month after month of the dullest monotony. For cowboy work there is need of special traits and special training, and young Easterners should be sure of themselves before trying it: the struggle for existence is very keen in the far West, and it is no place for men who lack the ruder, coarser virtues and physical qualities, no matter how intellectual or how refined and delicate their sensibilities. Such are more likely to fail there than in older communities. Probably during the past few years more than half of the young Easterners who have come West with a little money to learn the cattle business have failed signally and lost what they had in the beginning. The West, especially the far West, needs men who have been bred on the farm or in the workshop far more than it does clerks or college graduates.

Some of the cowboys are Mexicans, who generally do the actual work well enough, but are not trustworthy; moreover, they are always regarded with extreme disfavor by the Texans in an outfit, among whom the intolerant caste spirit is very strong. Southern-born whites will never work under them, and look down upon all colored or half-caste races. One spring I had with my wagon a Pueblo Indian, an excellent rider and roper, but a drunken, worthless, lazy devil; and in the summer of 1886 there were with us a Sioux half-breed, a quiet, hard-working, faithful fellow, and a mulatto, who was one of the best cow-hands in the whole round-up.

Cowboys, like most Westerners, occasionally show

remarkable versatility in their tastes and pursuits. One whom I know has abandoned his regular occupation for the past nine months, during which time he has been in succession a bartender, a school-teacher, and a probate judge! Another, whom I once employed for a short while, had passed through even more varied experiences, including those of a barber, a sailor, an apothecary, and a buffalo-hunter.

As a rule the cowboys are known to each other only by their first names, with, perhaps, as a prefix, the title of the brand for which they are working. Thus I remember once overhearing a casual remark to the effect that "Bar Y Harry" had married "the Seven Open A girl," the latter being the daughter of a neighboring ranchman. Often they receive nicknames, as, for instance, Dutch Wannigan, Windy Jack, and Kid Williams, all of whom are on the list of my personal acquaintances.

No man travelling through or living in the country need fear molestation from the cowboys unless he himself accompanies them on their drinking-bouts, or in other ways plays the fool, for they are, with us at any rate, very good fellows, and the most determined and effective foes of real law-breakers, such as horse and cattle thieves, murderers, etc. Few of the outrages quoted in Eastern papers as their handiwork are such in reality, the average Easterner apparently considering every individual who wears a broad hat and carries a six-shooter a cowboy. These outrages are, as a rule, the work of the roughs and criminals who always gather on the outskirts of civilization, and who infest every frontier town until the decent citizens become sufficiently numerous and determined to take the law into their own hands and drive them out. The old buffalo-

hunters, who formed a distinct class, became powerful forces for evil once they had destroyed the vast herds of mighty beasts the pursuit of which had been their means of livelihood. They were absolutely shiftless and improvident; they had no settled habits; they were inured to peril and hardship, but entirely unaccustomed to steady work; and so they afforded just the materials from which to make the bolder and more desperate kinds of criminals. When the game was gone they hung round the settlements for some little time, and then many of them naturally took to horse-stealing, cattle-killing, and highway robbery, although others, of course, went into honest pursuits. They were men who died off rapidly, however; for it is curious to see how many of these plainsmen, in spite of their iron nerves and thews, have their constitutions completely undermined, as much by the terrible hardships they have endured as by the fits of prolonged and bestial revelry with which they have varied them.

The "bad men," or professional fighters and man-killers, are of a different stamp, quite a number of them being, according to their light, perfectly honest. These are the men who do most of the killing in frontier communities; yet it is a noteworthy fact that the men who are killed generally deserve their fate. These men are, of course, used to brawling, and are not only sure shots, but, what is equally important, able to "draw" their weapons with marvellous quickness. They think nothing whatever of murder, and are the dread and terror of their associates; yet they are very chary of taking the life of a man of good standing, and will often weaken and back down at once if confronted fearlessly. With many of them their courage arises from confidence in their own powers and knowledge of the fear in which

they are held; and men of this type often show the white feather when they get in a tight place. Others, however, will face any odds without flinching; and I have known of these men fighting, when mortally wounded, with a cool, ferocious despair that was terrible. As elsewhere, so here, very quiet men are often those who in an emergency show themselves best able to hold their own. These desperadoes always try to "get the drop" on a foe—that is, to take him at a disadvantage before he can use his own weapon. I have known more men killed in this way, when the affair was wholly one-sided, than I have known to be shot in fair fight; and I have known fully as many who were shot by accident. It is wonderful, in the event of a street fight, how few bullets seem to hit the men they are aimed at.

During the last two or three years the stockmen have united to put down all these dangerous characters, often by the most summary exercise of lynch-law. Notorious bullies and murderers have been taken out and hung, while the bands of horse and cattle thieves have been regularly hunted down and destroyed in pitched fights by parties of armed cowboys; and as a consequence most of our territory is now perfectly law-abiding. One such fight occurred north of me early last spring. The horse-thieves were overtaken on the banks of the Missouri; two of their number were slain, and the others were driven on the ice, which broke, and two more were drowned. A few months previously another gang, whose headquarters were near the Canadian line, were surprised in their hut; two or three were shot down by the cowboys as they tried to come out, while the rest barricaded themselves in and fought until the great log hut was set on

fire, when they broke forth in a body, and nearly all were killed at once, only one or two making their escape. A little over two years ago one committee of vigilantes in eastern Montana shot or hung nearly sixty—not, however, with the best judgment in all cases.

II

OUT ON THE RANGE

A STRANGER in the Northwestern cattle country is especially struck by the resemblance the settlers show in their pursuits and habits to the Southern people. Nebraska and Dakota, east of the Missouri, resemble Minnesota and Iowa and the States farther east, but Montana and the Dakota cow country show more kinship with Texas; for, while elsewhere in America settlement has advanced along the parallels of latitude, on the great plains it has followed the meridians of longitude and has gone northerly rather than westerly. The business is carried on as it is in the South. The rough-rider of the plains, the hero of rope and revolver, is first cousin to the backwoodsman of the southern Alleghanies, the man of the axe and the rifle; he is only a unique offshoot of the frontier stock of the Southwest. The very term "round-up" is used by the cowboys in the exact sense in which it is employed by the hill people and mountaineers of Kentucky, Tennessee, and North Carolina, with whom also labor is dear and poor land cheap, and whose few cattle are consequently branded and turned loose in the woods exactly as is done with the great herds on the plains.

But the ranching industry itself was copied from the Mexicans, of whose land and herds the Southwestern frontiersmen of Texas took forcible possession; and the traveller in the Northwest will see at a glance that the terms and practices of our business are largely of Spanish origin. The cruel curb-bit and heavy stock-

saddle, with its high horn and cantle, prove that we have adopted Spanish-American horse-gear; and the broad hat, huge blunt spurs, and leather *chaparejos* of the rider, as well as the corral in which the stock are penned, all alike show the same ancestry. Throughout the cattle country east of the Rocky Mountains, from the Rio Grande to the Saskatchewan, the same terms are in use and the same system is followed; but on the Pacific slope, in California, there are certain small differences, even in nomenclature. Thus, we of the great plains all use the double-cinch saddle, with one girth behind the horse's fore legs and another farther back, while Californians prefer one with a single cinch, which seems to us much inferior for stock-work. Again, Californians use the Spanish word "lasso," which with us has been entirely dropped, no plainsman with pretensions to the title thinking of any word but "rope," either as noun or verb.

The rope, whether leather lariat or made of grass, is the one essential feature of every cowboy's equipment. Loosely coiled, it hangs from the horn or is tied to one side of the saddle in front of the thigh, and is used for every conceivable emergency, a twist being taken round the stout saddle-horn the second the noose settles over the neck or around the legs of a chased animal. In helping pull a wagon up a steep pitch, in dragging an animal by the horns out of a bog-hole, in hauling logs for the fire, and in a hundred other ways aside from its legitimate purpose, the rope is of invaluable service, and dexterity with it is prized almost or quite as highly as good horsemanship, and is much rarer. Once a cowboy is a good roper and rider, the only other accomplishment he values is skill with his great army revolver, it being taken for granted that he is already a thorough

plainsman and has long mastered the details of cattle work; for the best roper and rider alive is of little use unless he is hard-working, honest, keenly alive to his employer's interest, and very careful in the management of the cattle.

All cowboys can handle the rope with more or less ease and precision, but great skill in its use is only attained after long practice, and for its highest development needs that the man should have begun in earliest youth. Mexicans literally practise from infancy; the boy can hardly toddle before he gets a string and begins to render life a burden to the hens, goats, and pigs. A really first-class roper can command his own price, and is usually fit for little but his own special work.

It is much the same with riding. The cowboy is an excellent rider in his own way, but his way differs from that of a trained school horseman or cross-country fox-hunter as much as it does from the horsemanship of an Arab or of a Sioux Indian, and, as with all these, it has its special merits and special defects—schoolman, fox-hunter, cowboy, Arab, and Indian being all alike admirable riders in their respective styles, and each cherishing the same profound and ignorant contempt for every method but his own. The flash riders, or horse-breakers, always called "bronco-busters," can perform really marvellous feats, riding with ease the most vicious and unbroken beasts, that no ordinary cowboy would dare to tackle. Although sitting seemingly so loose in the saddle, such a rider cannot be jarred out of it by the wildest plunges, it being a favorite feat to sit out the antics of a bucking horse with silver half-dollars under each knee or in the stirrups under each foot. But their method of breaking is very rough, consisting only in saddling and bridling a beast by main

force and then riding him, also by main force, until he is exhausted, when he is turned over as "broken." Later on the cowboy himself may train his horse to stop or wheel instantly at a touch of the reins or bit, to start at top speed at a signal, and to stand motionless when left. An intelligent pony soon picks up a good deal of knowledge about the cow business on his own account.

All cattle are branded, usually on the hip, shoulder, and side, or on any one of them, with letters, numbers, or figures, in every combination, the outfit being known by its brand. Near me, for instance, are the Three Sevens, the Thistle, the Bellows, the OX, the VI., the Seventy-six Bar (76), and the Quarter Circle Diamond (◊) outfits. The dewlap and the ears may also be cut, notched, or slit. All brands are registered, and are thus protected against imitators, any man tampering with them being punished as severely as possible. Unbranded animals are called *mavericks*, and when found on the round-up are either branded by the owner of the range on which they are, or else are sold for the benefit of the association. At every shipping-point, as well as where the beef-cattle are received, there are stock inspectors, who jealously examine all the brands on the live animals or on the hides of the slaughtered ones, so as to detect any foul play, which is immediately reported to the association. It becomes second nature with a cowboy to inspect and note the brands of every bunch of animals he comes across.

Perhaps the thing that seems strangest to the traveller who for the first time crosses the bleak plains of this upper Missouri grazing country is the small number of cattle seen. He can hardly believe he is in the great stock region, where for miles upon miles he will not see a single head, and will then come only upon a straggling

herd of a few score. As a matter of fact, where there is no artificial food put up for winter use cattle always need a good deal of ground per head; and this is peculiarly the case with us in the Northwest, where much of the ground is bare of vegetation and where what pasture there is is both short and sparse. It is a matter of absolute necessity, where beasts are left to shift for themselves in the open during the bitter winter weather, that they then should have grass that they have not cropped too far down; and to insure this it is necessary with us to allow on the average about twenty-five acres of ground to each animal. This means that a range of country ten miles square will keep between two and three thousand head of stock only, and if more are put on, it is at the risk of seeing a severe winter kill off half or three-quarters of the whole number. So a range may be in reality overstocked when to an Eastern and unpractised eye it seems hardly to have on it a number worth taking into account.

Overstocking is the great danger threatening the stock-raising industry on the plains. This industry has only risen to be of more than local consequence during the past score of years, as before that time it was confined to Texas and California; but during these two decades of its existence the stockmen in different localities have again and again suffered the most ruinous losses, usually with overstocking as the ultimate cause. In the south the drought, and in the north the deep snows, and everywhere unusually bad winters, do immense damage; still, if the land is fitted for stock at all, they will, averaging one year with another, do very well so long as the feed is not cropped down too close.

But, of course, no amount of feed will make some

countries worth anything for cattle that are not housed during the winter; and stockmen in choosing new ranges for their herds pay almost as much attention to the capacity of the land for yielding shelter as they do to the abundant and good quality of the grass. High up among the foot-hills of the mountains, cattle will not live through the winter; and an open, rolling prairie land of heavy rainfall, where in consequence the snow lies deep and there is no protection from the furious cold winds, is useless for winter grazing, no matter how thick and high the feed. The three essentials for a range are grass, water, and shelter: the water is only needed in summer and the shelter in winter, while it may be doubted if drought during the hot months has ever killed off more cattle than have died of exposure on shelterless ground to the icy weather, lasting from November to April.

The finest summer range may be valueless either on account of its lack of shelter or because it is in a region of heavy snowfall—portions of territory lying in the same latitude and not very far apart often differing widely in this respect; or extraordinarily severe weather may cause a heavy death-rate utterly unconnected with overstocking. This was true of the loss that visited the few herds which spent the very hard winter of 1880 on the northern cattle plains. These were the pioneers of their kind, and the grass was all that could be desired; yet the extraordinary severity of the weather proved too much for the cattle. This was especially the case with those herds consisting of "pilgrims," as they are called—that is, of animals driven up on to the range from the south, and therefore in poor condition. One such herd of pilgrims on the Powder River suffered a loss of thirty-six hundred out of a total of four thou-

sand, and the survivors kept alive only by browsing on the tops of cottonwoods felled for them. Even seasoned animals fared very badly. One great herd in the Yellowstone Valley lost about a fourth of its number, the loss falling mainly on the breeding cows, calves, and bulls—always the chief sufferers, as the steers and also the dry cows will get through almost anything. The loss here would have been far heavier than it was had it not been for a curious trait shown by the cattle. They kept in bands of several hundred each, and during the time of the deep snows a band would make a start and travel several miles in a straight line, ploughing their way through the drifts and beating out a broad track; then, when stopped by a frozen watercourse or chain of buttes, they would turn back and graze over the trail thus made, the only place where they could get at the grass.

A drenching rain, followed by a severe snap of cold, is even more destructive than deep snow, for the saturated coats of the poor beasts are turned into sheets of icy mail, and the grass-blades, frozen at the roots as well as above, change into sheaves of brittle spears as uneatable as so many icicles. Entire herds have perished in consequence of such a storm. Mere cold, however, will kill only very weak animals, which is fortunate for us, as the spirit in the thermometer during winter often sinks to fifty degrees below zero, the cold being literally arctic; yet though the cattle become thin during such a snap of weather, and sometimes have their ears, tails, and even horns frozen off, they nevertheless rarely die from the cold alone. But if there is a blizzard blowing at such a time, the cattle need shelter, and if caught in the open, will travel for scores of miles before the storm, until they reach a break in the

ground, or some stretch of dense woodland, which will shield them from the blasts. If cattle travelling in this manner come to some obstacle that they cannot pass, as, for instance, a wire fence or a steep railway embankment, they will not try to make their way back against the storm, but will simply stand with their tails to it until they drop dead in their tracks; and, accordingly, in some parts of the country—but luckily far to the south of us—the railways are fringed with countless skeletons of beasts that have thus perished, while many of the long wire fences make an almost equally bad showing. In some of the very open country of Kansas and Indian Territory, many of the herds during the past two years have suffered a loss of from sixty to eighty per cent, although this was from a variety of causes, including drought as well as severe winter weather. Too much rain is quite as bad as too little, especially if it falls after the first of August, for then, though the growth of grass is very rank and luxuriant, it yet has little strength and does not cure well on the stalk; and it is only possible to winter cattle at large at all because of the way in which the grass turns into natural hay by this curing on the stalk.

But scantiness of food, due to overstocking, is the one really great danger to us in the north, who do not have to fear the droughts that occasionally devastate portions of the southern ranges. In a fairly good country, if the feed is plenty, the natural increase of a herd is sure shortly to repair any damage that may be done by an unusually severe winter—unless, indeed, the latter should be one such as occurs but two or three times in a century. When, however, the grass becomes cropped down, then the loss in even an ordinary year is heavy among the weaker animals, and if the winter

is at all severe it becomes simply appalling. The snow covers the shorter grass much quicker, and even when there is enough, the cattle, weak and unfit to travel around, have to work hard to get it; their exertions tending to enfeeble them and to render them less able to cope with the exposure and cold. The large patches of brushwood, into which the cattle crowd and which to a small number afford ample shelter and some food, become trodden down and yield neither when the beasts become too plentiful. Again, the grass is, of course, soonest eaten off where there is shelter; and accordingly, the broken ground to which the animals cling during winter may be grazed bare of vegetation though the open plains, to which only the hardiest will at this season stray, may have plenty; and insufficiency of food, although not such as actually to starve them, weakens them so that they succumb readily to the cold or to one of the numerous accidents to which they are liable—as slipping off an icy butte or getting cast in a frozen washout. The cows in calf are those that suffer most, and so heavy is the loss among these and so light the calf crop that it is yet an open question whether our northern ranges are as a whole fitted for breeding. When the animals get weak they will huddle into some nook or corner and simply stay there till they die. An empty hut, for instance, will often in the spring be found to contain the carcasses of a dozen weak cows or poor steers that have crawled into it for protection from the cold and, once in, have never moved out.

Overstocking may cause little or no harm for two or three years, but sooner or later there comes a winter which means ruin to the ranches that have too many cattle on them; and in our country, which is even now getting crowded, it is merely a question of time as to

when a winter will come that will understock the ranges by the summary process of killing off about half of all the cattle throughout the Northwest.* The herds that have just been put on suffer most in such a case; if they have come on late and are composed of weak animals, very few indeed, perhaps not ten per cent., will survive. The cattle that have been double or single wintered do better; while a range-raised steer is almost as tough as a buffalo.

In our northern country we have "free grass"; that is, the stockmen rarely own more than small portions of the land over which their cattle range, the bulk of it being unsurveyed and still the property of the national government—for the latter refuses to sell the soil except in small lots, acting on the wise principle of distributing it among as many owners as possible. Here and there some ranchman has acquired title to narrow strips of territory peculiarly valuable as giving water-right; but the amount of land thus occupied is small with us—although the reverse is the case farther south—and there is practically no fencing to speak of. As a consequence, the land is one vast pasture, and the man who overstocks his own range damages his neighbors as much as himself. These huge northern pastures are too dry and the soil too poor to be used for agriculture until the rich, wet lands to the east and west are occupied; and at present we have little to fear from grangers. Of course in the end much of the ground will be taken up for small farms, but the farmers that so far have come in have absolutely failed to make even a living, except now and then by raising a few vegetables for the use of the stockmen; and we are inclined to welcome the incoming of an occasional settler, if

* Written in the fall of 1886; the ensuing winter exactly fulfilled the prophecy.

he is a decent man, especially as, by the laws of the Territories in which the great grazing plains lie, he is obliged to fence in his own patch of cleared ground, and we do not have to keep our cattle out of it.

At present we are far more afraid of each other. There are always plenty of men who for the sake of the chance of gain they themselves run are willing to jeopardize the interests of their neighbors by putting on more cattle than the land will support—for the loss, of course, falls as heavily on the man who has put on the right number as on him who has put on too many; and it is against these individuals that we have to guard so far as we are able. To protect ourselves completely is impossible, but the very identity of interest that renders all of us liable to suffer for the fault of a few also renders us as a whole able to take some rough measures to guard against the wrong-doing of a portion of our number; for the fact that the cattle wander intermixed over the ranges forces all the ranchmen of a locality to combine if they wish to do their work effectively. Accordingly, the stockmen of a neighborhood, when it holds as many cattle as it safely can, usually unitedly refuse to work with any one who puts in another herd. In the cow country a man is peculiarly dependent upon his neighbors, and a small outfit is wholly unable to work without their assistance when once the cattle have mingled completely with those of other brands. A large outfit is much more master of its destiny, and can do its own work quite by itself; but even such a one can be injured in countless ways if the hostility of the neighboring ranchmen is incurred.

The best days of ranching are over; and though there are many ranchmen who still make money, yet during the past two or three years the majority have

certainly lost. This is especially true of the numerous Easterners who went into the business without any experience and trusted themselves entirely to their Western representatives; although, on the other hand, many of those who have made most money at it are Easterners, who, however, have happened to be naturally fitted for the work and who have deliberately settled down to learning the business as they would have learned any other, devoting their whole time and energy to it. Stock-raising as now carried on is characteristic of a young and wild land. As the country grows older it will in some places die out, and in others entirely change its character; the ranches will be broken up, will be gradually modified into stock-farms, or, if on good soil, may even fall under the sway of the husbandman.

In its present form stock-raising on the plains is doomed, and can hardly outlast the century. The great free ranches, with their barbarous, picturesque, and curiously fascinating surroundings, mark a primitive stage of existence as surely as do the great tracts of primeval forests and, like the latter, must pass away before the onward march of our people; and we who have felt the charm of the life, and have exulted in its abounding vigor and its bold, restless freedom, will not only regret its passing for our own sakes, but must also feel real sorrow that those who come after us are not to see, as we have seen, what is perhaps the pleasantest, healthiest, and most exciting phase of American existence.

III

THE HOME-RANCH

My home-ranch lies on both sides of the Little Missouri, the nearest ranchman above me being about twelve, and the nearest below me about ten, miles distant. The general course of the stream here is northerly, but, while flowing through my ranch, it takes a great westerly reach of some three miles, walled in, as always, between chains of steep, high bluffs half a mile or more apart. The stream twists down through the valley in long sweeps, leaving oval wooded bottoms, first on one side and then on the other; and in an open glade among the thick-growing timber stands the long, low house of hewn logs.

Just in front of the ranch veranda is a line of old cottonwoods that shade it during the fierce heats of summer, rendering it always cool and pleasant. But a few feet beyond these trees comes the cut-off bank of the river, through whose broad, sandy bed the shallow stream winds as if lost, except when a freshet fills it from brim to brim with foaming yellow water. The bluffs that wall in the river-valley curve back in semicircles, rising from its alluvial bottom generally as abrupt cliffs, but often as steep, grassy slopes that lead up to great level plateaus; and the line is broken every mile or two by the entrance of a coulée, or dry creek, whose head branches may be twenty miles back. Above us, where the river comes round the bend, the valley is very narrow, and the high buttes bounding it

rise, sheer and barren, into scalped hill peaks and naked knife-blade ridges.

The other buildings stand in the same open glade with the ranch-house, the dense growth of cottonwoods and matted, thorny underbrush making a wall all about, through which we have chopped our wagon roads and trodden out our own bridle-paths. The cattle have now trampled down this brush a little, but deer still lie in it, only a couple of hundred yards from the house; and from the door sometimes in the evening one can see them peer out into the open, or make their way down, timidly and cautiously, to drink at the river. The stable, sheds, and other outbuildings, with the hay-ricks and the pens for such cattle as we bring in during winter, are near the house; the patch of fenced garden land is on the edge of the woods; and near the middle of the glade stands the high, circular horse corral, with a snubbing-post in the centre, and a wing built out from one side of the gate entrance, so that the saddle band can be driven in without trouble. As it is very hard to work cattle where there is much brush, the larger cow corral is some four miles off on an open bottom.

A ranchman's life is certainly a very pleasant one, albeit generally varied with plenty of hardship and anxiety. Although occasionally he passes days of severe toil—for example, if he goes on the round-up he works as hard as any of his men—yet he no longer has to undergo the monotonous drudgery attendant upon the tasks of the cowboy or of the apprentice in the business. His fare is simple; but, if he chooses, it is good enough. Many ranches are provided with nothing at all but salt pork, canned goods, and bread; indeed, it is a curious fact that in travelling through

the cow country it is often impossible to get any milk or butter; but this is only because the owners or managers are too lazy to take enough trouble to insure their own comfort. We ourselves always keep up two or three cows, choosing such as are naturally tame, and so we invariably have plenty of milk and, when there is time for churning, a good deal of butter. We also keep hens, which, in spite of the damaging inroads of hawks, bobcats, and foxes, supply us with eggs, and in time of need, when our rifles have failed to keep us in game, with stewed, roast, or fried chicken also. From our garden we get potatoes, and unless drought, frost, or grasshoppers interfere (which they do about every second year), other vegetables as well. For fresh meat we depend chiefly upon our prowess as hunters.

During much of the time we are away on the different round-ups, that "wheeled house," the great four-horse wagon, being then our home; but when at the ranch our routine of life is always much the same, save during the excessively bitter weather of midwinter, when there is little to do except to hunt, if the days are fine enough. We breakfast early—before dawn when the nights have grown long, and rarely later than sunrise, even in midsummer. Perhaps before this meal, certainly the instant it is over, the man whose duty it is rides off to hunt up and drive in the saddle band. Each of us has his own string of horses, eight or ten in number, and the whole band usually split up into two or three companies. In addition to the scattered groups of the saddle band, our six or eight mares, with their colts, keep by themselves, and are rarely bothered by us, as no cowboy ever rides anything but horses, because mares give great trouble where all the animals have to be herded together. Once every two or three

days somebody rides round and finds out where each of these smaller bands is, but the man who goes out in the morning merely gathers one bunch. He drives these into the corral, the other men (who have been lolling idly about the house or stable, fixing their saddles or doing any odd job) coming out with their ropes as soon as they hear the patter of the unshod hoofs and the shouts of the cowboy driver. Going into the corral, and standing near the centre, each of us picks out some one of his own string from among the animals that are trotting and running in a compact mass round the circle; and after one or more trials, according to his skill, ropes it and leads it out. When all have caught their horses the rest are again turned loose, together with those that have been kept up overnight. Some horses soon get tame and do not need to be roped; my pet cutting pony, little Muley, and good old Manitou, my companion in so many hunting trips, will neither of them stay with the rest of their fellows that are jamming and jostling each other as they rush round in the dust of the corral, but they very sensibly walk up and stand quietly with the men in the middle, by the snubbing-post. Both are great pets, Manitou in particular; the wise old fellow being very fond of bread and sometimes coming up of his own accord to the ranch-house and even putting his head into the door to beg for it.

Once saddled, the men ride off on their different tasks; for almost everything is done in the saddle, except that in winter we cut our fire-wood and quarry our coal—both on the ranch—and in summer attend to the garden and put up what wild hay we need.

If any horses have strayed, one or two of the men will be sent off to look for them; for hunting lost horses is

one of the commonest and most irksome of our duties. Every outfit always has certain of its horses at large; and if they remain out long enough they become as wild and wary as deer and have to be regularly surrounded and run down. On one occasion, when three of mine had been running loose for a couple of months, we had to follow at full speed for at least fifteen miles before exhausting them enough to enable us to get some control over them and head them toward a corral. Twice I have had horses absent nearly a year before they were recovered. One of them, after being on the ranch nine months, went off one night and travelled about two hundred miles in a straight line back to its old haunts, swimming the Yellowstone on the way. Two others were at one time away nearly eighteen months, during which time we saw them twice, and on one occasion a couple of the men fairly ran their horses down in following them. We began to think they were lost for good, as they were all the time going farther down toward the Sioux country, but we finally recovered them.

If the men do not go horse-hunting, they may ride off over the range; for there is generally some work to be done among the cattle, such as driving in and branding calves that have been overlooked by the round-up, or getting some animal out of a bog-hole. During the early spring months, before the round-up begins, the chief work is in hauling out mired cows and steers; and if we did not keep a sharp lookout, the losses at this season would be very serious. As long as everything is frozen solid there is, of course, no danger from miring; but when the thaw comes, along toward the beginning of March, a period of new danger to the cattle sets in. When the ice breaks up, the streams

are left with an edging of deep bog, while the quicksand is at its worst. As the frost goes out of the soil, the ground round every little alkali spring changes into a trembling quagmire, and deep holes of slimy, tenacious mud form in the bottom of all the gullies. The cattle, which have had to live on snow for three or four months, are very eager for water, and are weak and in poor condition. They rush heedlessly into any pool and stand there, drinking gallons of the icy water and sinking steadily into the mud. When they try to get out they are already too deep down, and are too weak to make a prolonged struggle. After one or two fits of desperate floundering, they resign themselves to their fate with dumb apathy and are lost, unless some one of us riding about discovers and hauls them out. They may be thus lost in wonderfully small mud-holes; often they will be found dead in a gulch but two or three feet across, or in the quicksand of a creek so narrow that it could almost be jumped. An alkali hole, where the water oozes out through the thick clay, is the worst of all, owing to the ropy tenacity with which the horrible substance sticks and clings to any unfortunate beast that gets into it.

In the spring these mud-holes cause very serious losses among the cattle, and are at all times fruitful sources of danger; indeed, during an ordinary year more cattle die from getting mired than from any other cause. In addition to this they also often prove very annoying to the rider himself, as getting his steed mired or caught in a quicksand is one of the commonest of the accidents that beset a horseman in the far West. This usually happens in fording a river, if the latter is at all high, or else in crossing one of the numerous creeks; although I once saw a horse and rider suddenly engulfed

while leisurely walking over what appeared to be dry land. They had come to an alkali mud-hole, an old buffalo-wallow, which had filled up and was covered with a sun-baked crust, that let them through as if they had stepped on a trap-door. There being several of us along, we got down our ropes and dragged both unfortunates out in short order.

When the river is up it is a very common thing for a horseman to have great difficulty in crossing, for the swift, brown water runs over a bed of deep quicksand that is ever shifting. An inexperienced horse, or a mule—for a mule is useless in mud or quicksand—becomes mad with fright in such a crossing, and, after speedily exhausting its strength in wild struggles, will throw itself on its side and drown unless the rider gets it out. An old horse used to such work will, on the contrary, take matters quietly and often push along through really dangerous quicksand. Old Manitou never loses his head for an instant; but, now resting a few seconds, now feeling his way cautiously forward, and now making two or three desperate plunges, will go on wherever a horse possibly can. It is really dangerous crossing some of the creeks, as the bottom may give way where it seems hardest; and if one is alone he may work hours in vain before getting his horse out, even after taking off both saddle and bridle, the only hope being to head it so that every plunge takes it an inch or two in the right direction.

Nor are mud-holes the only danger the horseman has to fear; for in much of the Bad Lands the buttes are so steep and broken that it needs genuine mountaineering skill to get through them, and no horse but a Western one, bred to the business, could accomplish the feat. In many parts of our country it is impossible for a horse-

man who does not know the land to cross it, and it is difficult enough even for an experienced hand. For a stretch of nearly ten miles along the Little Missouri above my range, and where it passes through it, there are but three or four places where it is possible for a horseman to get out to the eastern prairie through the exceedingly broken country lying back from the river. In places this very rough ground comes down to the water; elsewhere it lies back near the heads of the creeks. In such very bad ground the whole country seems to be one tangled chaos of canyon-like valleys, winding gullies and washouts with abrupt, unbroken sides, isolated peaks of sandstone, marl, or "gumbo" clay, which rain turns into slippery glue, and hill chains the ridges of which always end in sheer cliffs. After a man has made his way with infinite toil for half a mile, a point will be reached around which it is an absolute impossibility to go, and the adventurer has nothing to do but painfully retrace his steps and try again in a new direction, as likely as not with the same result. In such a place the rider dismounts and leads his horse, the latter climbing with catlike agility up seemingly inaccessible heights, scrambling across the steep, sloping shoulders of the bluffs, sliding down the faces of the clay cliffs with all four legs rigid, or dropping from ledge to ledge like a goat, and accepting with unruffled composure an occasional roll from top to bottom. But, in spite of the climbing abilities of the ponies, it is difficult, and at times—for our steeds, at any rate—dangerous work to go through such places, and we only do it when it cannot be avoided. Once I was overtaken by darkness while trying to get through a great tract of very rough land, and, after once or twice nearly breaking my neck, in despair had to give up all attempts to

get out, and until daybreak simply stayed where I was, in a kind of ledge or pocket on the side of the cliff, luckily sheltered from the wind. It was midsummer and the nights were short, but this particular one seemed quite long enough; and though I was on the move by dawn, it was three hours later before I led the horse, as hungry, numb, and stiff as myself, out on the prairie again.

Occasionally it is imperatively necessary to cross some of the worst parts of the Bad Lands with a wagon, and such a trip is exhausting and laborious beyond belief. Often the wagon will have to be taken to pieces every few hundred yards in order to get it over a ravine, lower it into a valley, or drag it up a cliff. One outfit, that a year ago tried to take a short cut through some of the Bad Lands of the Powder River, made just four miles in three days, and then had to come back to their starting-point after all. But with only saddle-horses we feel that it must be a very extraordinary country indeed if, in case of necessity, we cannot go through it.

The long forenoon's work, with its attendant mishaps to man and beast, being over, the men who have been out among the horses and cattle come riding in, to be joined by their fellows—if any there be—who have been hunting or haying or chopping wood. The midday dinner is variable as to time, for it comes when the men have returned from their work; but, whatever be the hour, it is the most substantial meal of the day, and we feel that we have little fault to find with a table on the clean cloth of which are spread platters of smoked elk meat, loaves of good bread, jugs and bowls of milk, saddles of venison or broiled antelope-steaks, perhaps roast and fried prairie-chickens, with eggs, butter, wild plums, and tea or coffee.

The afternoon's tasks are usually much the same as the morning's, but this time is often spent in doing the odds and ends; as, for instance, it may be devoted to breaking in a new horse. Large outfits generally hire a bronco-buster to do this; but we ourselves almost always break our own horses, two or three of my men being pretty good riders, although none of them can claim to be anything out of the common. A first-class flash rider or bronco-buster receives high wages and deserves them, for he follows a most dangerous trade at which no man can hope to grow old; his work being infinitely harder than that of an Eastern horse-breaker or rough-rider, because he has to do it in such a limited time. A good rider is a good rider all the world over; but an Eastern or English horse-breaker and Western bronco-buster have so little in common with each other as regards style or surroundings, and are so totally out of place in doing each other's work, that it is almost impossible to get either to admit that the other has any merits at all as a horseman, for neither could sit in the saddle of the other or could without great difficulty perform his task. The ordinary Eastern seat, which approaches more or less the seat of a cross-country rider or fox-hunter, is nearly as different from the cowboy's seat as from that of a man who rides bareback. The stirrups on a stock-saddle are much farther back than they are on an ordinary English one (a difference far more important than the high horn and cantle of the former), and the man stands nearly erect in them, instead of having his legs bent; and he grips with the thighs and not with the knees, throwing his feet well out. Some of the things he teaches his horse would be wholly useless to an Eastern equestrian: for example, one of the first lessons the newly caught animal has to

learn is not to "run on a rope"; and he is taught this by being violently snubbed up, probably turning a somersault, the first two or three times that he feels the noose settle round his neck and makes a mad rush for liberty. The snubbing-post is the usual adjunct in teaching such a lesson; but a skilful man can do without any help and throw a horse clean over by holding the rope tight against the left haunch, at the same time leaning so far back, with the legs straight in front, that the heels dig deep into the ground when the strain comes, and the horse, running out with the slack of the rope, is brought up standing, or even turned head over heels by the shock. Cowboys are probably the only working men in the world who invariably wear gloves, buckskin gantlets being preferred, as otherwise the ropes would soon take every particle of skin off their hands.

A bronco-buster has to work by such violent methods in consequence of the short amount of time at his command. Horses are cheap, each outfit has a great many, and the wages for breaking an animal are but five or ten dollars. Three rides, of an hour or two each, on as many consecutive days, are the outside number a bronco-buster deems necessary before turning an animal over as "broken." The average bronco-buster, however, handles horses so very rudely that we prefer, aside from motives of economy, to break our own; and this is always possible, if we take enough time. The best and quietest horses on the ranch are far from being those broken by the best riders; on the contrary, they are those that have been handled most gently, although firmly, and that have had the greatest number of days devoted to their education.

Some horses, of course, are almost incurably vicious,

and must be conquered by main force. One pleasing brute on my ranch will at times rush at a man open-mouthed like a wolf, and this is a regular trick of the range stallions. In a great many—indeed, in most—localities there are wild horses to be found, which, although invariably of domestic descent, being either themselves runaways from some ranch or Indian outfit or else claiming such for their sires and dams, yet are quite as wild as the antelope on whose domain they have intruded. Ranchmen run in these wild horses whenever possible, and they are but little more difficult to break than the so-called "tame" animals. But the wild stallions are, whenever possible, shot; both because of their propensity for driving off the ranch mares, and because their incurable viciousness makes them always unsafe companions for other horses still more than for men. A wild stallion fears no beast except the grizzly, and will not always flinch from an encounter with it; yet it is a curious fact that a jack will almost always kill one in a fair fight. The particulars of a fight of this sort were related to me by a cattleman who was engaged in bringing out blooded stock from the East. Among the animals under his charge were two great stallions, one gray and one black, and a fine jackass, not much over half the size of either of the former. The animals were kept in separate pens, but one day both horses got into the same enclosure, next to the jack-pen, and began to fight as only enraged stallions can, striking like boxers with their forefeet, and biting with their teeth. The gray was getting the best of it; but while clinched with his antagonist in one tussle they rolled against the jack-pen, breaking it in. No sooner was the jack at liberty than, with ears laid back and mouth wide open, he made straight for the

two horses, who had for the moment separated. The gray turned to meet him, rearing on his hind legs and striking at him with his forefeet; but the jack slipped in, and in a minute grasped his antagonist by the throat with his wide-open jaws, and then held on like a bulldog, all four feet planted stiffly in the soil. The stallion made tremendous efforts to shake him off: he would try to whirl round and kick him, but for that the jack was too short; then he would rise up, lifting the jack off the ground, and strike at him with his forefeet; but all that he gained by this was to skin his foe's front legs without making him loose his hold. Twice they fell, and twice the stallion rose, by main strength dragging the jack with him; but all in vain. Meanwhile the black horse attacked both the combatants, with perfect impartiality, striking and kicking them with his hoofs, while his teeth, as they slipped off the tough hides, met with a snap like that of a bear trap. Undoubtedly the jack would have killed at least one of the horses had not the men come up, and with no small difficulty separated the maddened brutes.

If not breaking horses, mending saddles, or doing something else of the sort, the cowboys will often while away their leisure moments by practising with the rope. A man cannot practise too much with this if he wishes to attain even moderate proficiency; and as a matter of fact he soon gets to wish to practise the whole time. A cowboy is always roping something, and it especially delights him to try his skill at game. A friend of mine, a young ranchman in the Judith basin, about four years ago roped a buffalo, and by the exercise of the greatest skill, both on his own part and on his steed's, actually succeeded, by alternate bullying and coaxing, in getting the huge brute almost into camp. I have occasionally

known men on fast horses to rope deer, and even antelope, when circumstances all joined to favor them; and last summer one of the cowboys on a ranch about thirty miles off ran into and roped a wounded elk. A forty-foot lariat is the one commonly used, for the ordinary range at which a man can throw it is only about twenty-five feet. Few men can throw forty feet; and to do this, taking into account the coil, needs a sixty-foot rope.

When the day's work is over we take supper, and bedtime comes soon afterward, for the men who live on ranches sleep well and soundly. As a rule, the nights are cool and bracing, even in midsummer; except when we occasionally have a spell of burning weather, with a steady hot wind that blows in our faces like a furnace blast, sending the thermometer far up above a hundred and making us gasp for breath, even at night, in the dry-baked heat of the air. But it is only rarely that we get a few days of this sort; generally, no matter how unbearable the heat of the day has been, we can at least sleep pleasantly at night.

A ranchman's work is, of course, free from much of the sameness attendant upon that of a mere cowboy. One day he will ride out with his men among the cattle, or after strayed horses; the next he may hunt, so as to keep the ranch in meat; then he can make the tour of his outlying camps; or, again, may join one of the round-ups for a week or two, perhaps keeping with it the entire time it is working. On occasions he will have a good deal of spare time on his hands, which, if he chooses, he can spend in reading or writing. If he cares for books, there will be many a worn volume in the primitive little sitting-room, with its log walls and huge fireplace; but after a hard day's work a man will

not read much, but will rock to and fro in the flickering firelight, talking sleepily over his success in the day's chase and the difficulty he has had with the cattle; or else may simply lie stretched at full length on the elk-hides and wolfskins in front of the hearthstone, listening in drowsy silence to the roar and crackle of the blazing logs and to the moaning of the wind outside.

In the sharp fall weather the riding is delicious all day long; but even in the late spring, and all through the summer, we try, if we can, to do our work before the heat of the day, and if going on a long ride, whether to hunt or for other purposes, leave the ranch-house by dawn.

The early rides in the spring mornings have a charm all their own, for they are taken when, for the one and only time during the year, the same brown landscape of these high plains turns to a vivid green, as the new grass sprouts and the trees and bushes thrust forth the young leaves; and at dawn, with the dew glittering everywhere, all things show at their best and freshest. The flowers are out and a man may gallop for miles at a stretch with his horse's hoofs sinking at every stride into the carpet of prairie-roses, whose short stalks lift the beautiful blossoms but a few inches from the ground. Even in the waste places the cactuses are blooming; and one kind in particular, a dwarfish, globular plant, with its mass of splendid crimson flowers, glows against the sides of the gray buttes like a splash of flame.

The ravines, winding about and splitting into a labyrinth of coulées with chains of rounded hills to separate them, have groves of trees in their bottoms, along the sides of the watercourses. In these are found the blacktail deer, and his cousin, the whitetail, too,

with his flaunting flag; but in the springtime, when we are after antelope only, we must go out farther to the flat prairie land on the divide. Here, in places, the level grassy plains are strewn with mounds and hillocks of red or gray scoria, that stand singly or clustered into little groups, their tops crested or their sides covered by queer detached masses of volcanic rock, wrought into strange shapes by the dead forces whose blind, hidden strength long ago called them into being. The road our wagons take, when the water is too high for us to come down the river-bottom, stretches far ahead —two dark, straight, parallel furrows which merge into one in the distance. Quaint little horned frogs crawl sluggishly along in the wheel tracks, and the sickle-billed curlews run over the ground or soar above and around the horsemen, uttering their mournful, never-ceasing clamor. The grass-land stretches out in the sunlight like a sea, every wind bending the blades into a ripple, and flecking the prairie with shifting patches of a different green from that around, exactly as the touch of a light squall or wind-gust will fleck the smooth surface of the ocean. Our Western plains differ widely in detail from those of Asia; yet they always call to mind

> ". . . The Scythian
> On the wide steppe, unharnessing
> His wheel'd house at noon.
> He tethers his beast down, and makes his meal—
> Mares' milk, and bread
> Baked on the embers;—all around
> The boundless, waving grass-plains stretch . . .
> . . .; before him, for long miles,
> Alive with bright green lizards
> And the springing bustard fowl,
> The track, a straight black line,

Furrows the rich soil; here and there
Clusters of lonely mounds
Topp'd with rough hewn,
Gray, rain-blear'd statues, overpeer
The sunny waste."

In the spring mornings the rider on the plains will hear bird songs unknown in the East. The Missouri skylark sings while soaring above the great plateaus so high in the air that it is impossible to see the bird; and this habit of singing while soaring it shares with some sparrow-like birds that are often found in company with it. The white-shouldered lark-bunting, in its livery of black, has rich, full notes, and as it sings on the wing it reminds one of the bobolink; and the sweet-voiced lark-finch also utters its song in the air. These birds and most of the sparrows of the plains are characteristic of this region.

But many of our birds, especially those found in the wooded river-bottoms, answer to those of the East; only almost each one has some marked point of difference from its Eastern representative. The bluebird out West is very much of a blue bird indeed, for it has no "earth tinge" on its breast at all; while the indigo-bird, on the contrary, has gained the ruddy markings that the other has lost. The flicker has the shafts of its wing and tail quills colored orange instead of yellow. The towhee has lost all title to its name, for its only cry is a mew like that of a catbird; while, most wonderful of all, the meadow-lark has found a rich, strong voice, and is one of the sweetest and most incessant singers we have.

Throughout June the thickets and groves about the ranch-house are loud with bird music from before dawn till long after sunrise. The thrashers have sung

all the night through from among the thorn-bushes if there has been a moon, or even if there has been bright starlight; and before the first glimmer of gray the bell-like, silvery songs of the shy woodland thrushes chime in; while meadow-lark, robin, bluebird, and song-sparrow, together with many rarer singers, like the grosbeak, join in swelling the chorus. There are some would-be singers whose intention is better than their execution. Blackbirds of several kinds are plenty round the house and stables, walking about with a knowing air, like so many dwarf crows; and now and then a flock of yellowheads will mix for a few days with their purple or rusty-colored brethren. The males of these yellow-headed grackles are really handsome, their orange and yellow heads contrasting finely with the black of the rest of their plumage; but their voices are discordant to a degree. When a flock has done feeding it will often light in straggling order among the trees in front of the veranda, and then the males will begin to sing, or rather to utter the most extraordinary collection of broken sounds—creakings, gurglings, hisses, twitters, and every now and then a liquid note or two. It is like an accentuated representation of the noise made by a flock of common blackbirds. At nightfall the poorwills begin to utter their boding call from the wooded ravines back in the hills; not "whippoorwill," as in the East, but with two syllables only. They often come round the ranch-house. Late one evening I had been sitting motionless on the veranda, looking out across the water and watching the green and brown of the hilltops change to purple and umber and then fade off into shadowy gray as the sombre darkness deepened. Suddenly a poorwill lit on the floor beside me and stayed some little time; now and

then uttering its mournful cries, then ceasing for a few moments as it flitted round after insects, and again returning to the same place to begin anew. The little owls, too, call to each other with tremulous, quavering voices throughout the livelong night, as they sit in the creaking trees that overhang the roof. Now and then we hear the wilder voices of the wilderness, from animals that in the hours of darkness do not fear the neighborhood of man: the coyotes wail like dismal ventriloquists, or the silence may be broken by the strident challenge of a lynx, or by the snorting and stamping of a deer that has come to the edge of the open.

In the hot noontide hours of midsummer the broad ranch veranda, always in the shade, is almost the only spot where a man can be comfortable; but here he can sit for hours at a time, leaning back in his rocking-chair, as he reads or smokes, or with half-closed, dreamy eyes gazes across the shallow, nearly dry river-bed to the wooded bottoms opposite, and to the plateaus lying back of them. Against the sheer white faces of the cliffs, that come down without a break, the dark-green tree-tops stand out in bold relief. In the hot, lifeless air all objects that are not near by seem to sway and waver. There are few sounds to break the stillness. From the upper branches of the cottonwood-trees overhead—whose shimmering, tremulous leaves are hardly ever quiet, but if the wind stirs at all, rustle and quiver and sigh all day long—comes every now and then the soft, melancholy cooing of the mourning-dove, whose voice always seems far away and expresses more than any other sound in nature the sadness of gentle, hopeless, never-ending grief. The other birds are still; and very few animals move about. Now and then the

black shadow of a wheeling vulture falls on the sun-scorched ground. The cattle, that have strung down in long files from the hills, lie quietly on the sand-bars, except that some of the bulls keep travelling up and down, bellowing and routing or giving vent to long, surly grumblings as they paw the sand and toss it up with their horns. At times the horses, too, will come down to drink, and to splash and roll in the water.

The prairie-dogs alone are not daunted by the heat, but sit at the mouths of their burrows with their usual pert curiosity. They are bothersome little fellows, and most prolific, increasing in spite of the perpetual war made on them by every carnivorous bird and beast. One of their worst foes is the black-footed ferret, a handsome, rather rare animal somewhat like a mink, with a yellow-brown body and dark feet and mask. It is a most bloodthirsty little brute, feeding on all small animals and ground-birds. It will readily master a jack-rabbit, will kill very young fawns if it finds them in the mother's absence, and works extraordinary havoc in a dog town, as it can follow the wretched little beasts down into the burrows. In one instance, I knew of a black-footed ferret making a succession of inroads on a ranchman's poultry, killing and carrying off most of them before it was trapped. Coyotes, foxes, swifts, badgers, and skunks also like to lurk about the dog towns. Of the skunks, by the way, we had last year altogether too much; there was a perfect plague of them all along the river, and they took to trying to get into the huts, with the stupid pertinacity of the species. At every ranch-house dozens were killed, we ourselves bagging thirty-three, all slain near the house, and one, to our unspeakable sorrow, in it.

In making a journey over ground we know, during the hot weather we often prefer to ride by moonlight. The moon shines very brightly through the dry, clear night air, turning the gray buttes into glimmering silver; and the horses travel far more readily and easily than under the glaring noonday sun. The road between my upper and lower ranch-houses is about forty miles long, sometimes following the river-bed, and then again branching off inland, crossing the great plateaus and winding through the ravines of the broken country. It is a five hours' fair ride; and so, in a hot spell, we like to take it during the cool of the night, starting at sunset. After nightfall the face of the country seems to alter marvellously, and the clear moonlight only intensifies the change. The river gleams like running quicksilver, and the moonbeams play over the grassy stretches of the plateaus and glance off the wind-rippled blades as they would from water. The Bad Lands seem to be stranger and wilder than ever, the silvery rays turning the country into a kind of grim fairy-land. The grotesque, fantastic outlines of the higher cliffs stand out with startling clearness, while the lower buttes have become formless, misshapen masses, and the deep gorges are in black shadow; in the darkness there will be no sound but the rhythmic echo of the hoof-beats of the horses, and the steady, metallic clank of the steel bridle-chains.

But the fall is the time for riding; for in the keen, frosty air neither man nor beast will tire, though out from the dawn until the shadows have again waxed long and the daylight has begun to wane, warning all to push straight for home without drawing rein. Then deer-saddles and elk-haunches hang from the trees near the house; and one can have good sport right on

the sand of the river-bed, for we always keep shotgun or rifle at hand, to be ready for any prairie-chickens, or for such of the passing water-fowl as light in the river near us. Occasionally we take a shot at a flock of waders, among which the pretty avocets are the most striking in looks and manners. Prairie-fowl are quite plenty all round us, and occasionally small flocks come fairly down into the yard, or perch among the trees near by. At evening they fly down to the river to drink, and as they sit on the sand-bars offer fine marks for the rifles. So do the geese and ducks when they occasionally light on the same places or paddle leisurely downstream in the middle of the river; but to make much of a bag of these we have to use the heavy No. 10 choke-bore shotgun, while the little sixteen-bore fowling-piece is much the handiest for prairie-fowl. A good many different kinds of water-fowl pass, ranging in size from a teal duck to a Canada goose, and all of them at times help to eke out our bill of fare. Last fall a white-fronted goose lighted on the river in front of the ranch-house, and three of us, armed with miscellaneous weapons, went out after him; we disabled him, and then after much bad shooting, and more violent running through thick sand and thick underbrush, finally overtook and most foully butchered him. The snow-geese and common wild geese are what we usually kill, however.

Sometimes strings of sand-hill cranes fly along the river, their guttural clangor being heard very far off. They usually light on a plateau, where sometimes they form rings and go through a series of queer antics, dancing and posturing to each other. They are exceedingly wide-awake birds, and more shy and wary than antelope, so that they are rarely shot; yet once I suc-

ceeded in stalking up to a group in the early morning, and, firing into them rather at random, my bullet killed a full-grown female. Its breast, when roasted, proved to be very good eating.

Sometimes we vary our diet with fish—wall-eyed pike, ugly, slimy catfish, and other uncouth finny things, looking very fit denizens of the mud-choked water; but they are good eating withal, in spite of their uncanny appearance. We usually catch them with set lines, left out overnight in the deeper pools.

The cattle are fattest and in best condition during the fall, and it is then that the bulk of the beef steers are gathered and shipped—four-year-olds as a rule, though some threes and fives go along with them. Cattle are a nuisance while hunting on foot, as they either take fright and run off when they see the hunter, scaring all game within sight, or else, what is worse, follow him, blustering and bullying and pretending that they are on the point of charging, but rarely actually doing so. Still, they are occasionally really dangerous, and it is never entirely safe for a man to be on foot when there is a chance of meeting the droves of long-horned steers. But they will always bluster rather than fight, whether with men or beasts, or with one another. The bulls and some of the steers are forever travelling and challenging each other, never ceasing their hoarse rumbling and moaning and their long-drawn, savage bellowing, tearing up the banks with their horns and sending little spurts of dust above their shoulders with their fore hoofs; yet they do not seem especially fond of real fighting, although, of course, they do occasionally have most desperate and obstinate set-tos with one another. A large bear will make short work of a bull: a few months ago one of

the former killed a very big bull near a ranch-house a score of miles or so distant, and during one night tore up and devoured a large part of his victim. The ranchman poisoned the carcass and killed the bear.

IV

THE ROUND-UP

During the winter-time there is ordinarily but little work done among the cattle. There is some line riding, and a continual lookout is kept for the very weak animals—usually cows and calves, who have to be driven in, fed, and housed; but most of the stock are left to shift for themselves, undisturbed. Almost every stock-growers' association forbids branding any calves before the spring round-up. If great bands of cattle wander off the range, parties may be fitted out to go after them and bring them back; but this is only done when absolutely necessary, as when the drift of the cattle has been toward an Indian reservation or a settled granger country, for the weather is very severe, and the horses are so poor that their food must be carried along.

The bulk of the work is done during the summer, including the late spring and early fall, and consists mainly in a succession of round-ups, beginning, with us, in May and ending toward the last of October.

But a good deal may be done in the intervals by riding over one's range. Frequently, too, herding will be practised on a large scale.

Still more important is the "trail" work: cattle, while driven from one range to another or to a shipping-point for beef, being said to be "on the trail." For years, the oversupply from the vast breeding ranches to the south, especially in Texas, has been driven northward in large herds, either to the shipping towns

along the great railroads, or else to the fattening ranges of the Northwest; it having been found, so far, that, while the calf crop is larger in the South, beeves become much heavier in the North. Such cattle, for the most part, went along tolerably well-marked routes or trails, which became for the time being of great importance, flourishing—and extremely lawless—towns growing up along them; but with the growth of the railroad system, and above all with the filling up of the northern ranges, these trails have steadily become of less and less consequence, though many herds still travel them on their way to the already crowded ranges of western Dakota and Montana, or to the Canadian regions beyond. The trail work is something by itself. The herds may be on the trail several months, averaging fifteen miles or less a day. The cowboys accompanying each have to undergo much hard toil, of a peculiarly same and wearisome kind, on account of the extreme slowness with which everything must be done, as trail cattle should never be hurried. The foreman of a trail outfit must be not only a veteran cow-hand but also a miracle of patience and resolution.

Round-up work is far less irksome, there being an immense amount of dash and excitement connected with it; and when once the cattle are on the range, the important work is done during the round-up. On cow-ranches, or wherever there is breeding stock, the spring round-up is the great event of the season, as it is then that the bulk of the calves are branded. It usually lasts six weeks, or thereabouts; but its end by no means implies rest for the stockman. On the contrary, as soon as it is over, wagons are sent to work out-of-the-way parts of the country that have been passed over, but where cattle are supposed to have drifted;

and by the time these have come back the first beef round-up has begun, and thereafter beeves are steadily gathered and shipped, at least from among the larger herds, until cold weather sets in; and in the fall there is another round-up, to brand the late calves and see that the stock is got back on the range. As all of these round-ups are of one character, a description of the most important, taking place in the spring, will be enough.

In April we begin to get up the horses. Throughout the winter very few have been kept for use, as they are then poor and weak, and must be given grain and hay if they are to be worked. The men in the line camps need two or three apiece, and each man at the home-ranch has a couple more; but the rest are left out to shift for themselves, which the tough, hardy little fellows are well able to do. Ponies can pick up a living where cattle die; though the scanty feed, which they may have to uncover by pawing off the snow, and the bitter weather often make them look very gaunt by springtime. But the first warm rains bring up the green grass, and then all the live stock gain flesh with wonderful rapidity. When the spring round-up begins the horses should be as fat and sleek as possible. After running all winter free, even the most sober pony is apt to betray an inclination to buck; and, if possible, we like to ride every animal once or twice before we begin to do real work with him. Animals that have escaped for any length of time are almost as bad to handle as if they had never been broken. One of the two horses mentioned in a former chapter as having been gone eighteen months has, since his return, been suggestively dubbed "Dynamite Jimmy," on account of the incessant and eruptive energy with which he bucks. Many

of our horses, by the way, are thus named from some feat or peculiarity. Wire Fence, when being broken, ran into one of the abominations after which he is now called; Hackamore once got away and remained out for three weeks with a hackamore, or breaking-halter, on him; Macaulay contracted the habit of regularly getting rid of the huge Scotchman to whom he was intrusted; Bulberry Johnny spent the hour or two after he was first mounted in a large patch of thorny bulberry bushes, his distracted rider unable to get him to do anything but move round sidewise in a circle; Fall Back would never get to the front; Water Skip always jumps mud-puddles; and there are a dozen others with names as purely descriptive.

The stock-growers of Montana, of the western part of Dakota, and even of portions of extreme northern Wyoming—that is, of all the grazing-lands lying in the basin of the upper Missouri—have united and formed themselves into the great Montana Stock Growers' Association. Among the countless benefits they have derived from this course, not the least has been the way in which the various round-ups work in with and supplement one another. At the spring meeting of the association, the entire territory mentioned above, including perhaps a hundred thousand square miles, is mapped out into round-up districts, which generally are changed but slightly from year to year, and the times and places for the round-ups to begin refixed so that those of adjacent districts may be run with a view to the best interests of all. Thus the stockmen along the Yellowstone have one round-up; we along the Little Missouri have another; and the country lying between, through which the Big Beaver flows, is almost equally important to both. Accordingly, one spring, the

Little Missouri round-up, beginning May 25 and working downstream, was timed so as to reach the mouth of the Big Beaver about June 1, the Yellowstone round-up beginning at that date and place. Both then worked up the Beaver together to its head, when the Yellowstone men turned to the west and we bent back to our own river; thus the bulk of the strayed cattle of each were brought back to their respective ranges. Our own round-up district covers the Big and Little Beaver creeks, which rise near each other, but empty into the Little Missouri nearly a hundred and fifty miles apart, and so much of the latter river as lies between their mouths.

The captain or foreman of the round-up, upon whom very much of its efficiency and success depends, is chosen beforehand. He is, of course, an expert cowman, thoroughly acquainted with the country; and he must also be able to command and to keep control of the wild rough-riders he has under him—a feat needing both tact and firmness.

At the appointed day all meet at the place from which the round-up is to start. Each ranch, of course, has most work to be done in its own round-up district, but it is also necessary to have representatives in all those surrounding it. A large outfit may employ a dozen cowboys, or over, in the home district, and yet have nearly as many more representing its interest in the various ones adjoining. Smaller outfits generally club together to run a wagon and send outside representatives, or else go along with their stronger neighbors, they paying part of the expenses. A large outfit, with a herd of twenty thousand cattle or more, can, if necessary, run a round-up entirely by itself, and is able to act independently of outside help; it is there-

fore at a great advantage compared with those that can take no step effectively without their neighbors' consent and assistance.

If the starting-point is some distance off, it may be necessary to leave home three or four days in advance. Before this we have got everything in readiness; have overhauled the wagons, shod any horse whose forefeet are tender—as a rule, all our ponies go barefooted—and left things in order at the ranch. Our outfit may be taken as a sample of every one else's. We have a stout four-horse wagon to carry the bedding and the food; in its rear a mess-chest is rigged to hold the knives, forks, cans, etc. All our four team-horses are strong, willing animals, though of no great size, being originally just "broncos," or unbroken native horses, like the others. The teamster is also cook: a man who is a really first-rate hand at both driving and cooking—and our present teamster is both—can always command his price. Besides our own men, some cowboys from neighboring ranches and two or three representatives from other round-up districts are always along, and we generally have at least a dozen "riders," as they are termed—that is, cowboys, or "cow-punchers," who do the actual cattle work—with the wagon. Each of these has a string of eight or ten ponies; and to take charge of the saddle band, thus consisting of a hundred odd head, there are two herders, always known as "horse-wranglers"—one for the day and one for the night. Occasionally there will be two wagons, one to carry the bedding and one the food, known, respectively, as the bed and the mess wagon; but this is not usual.

While travelling to the meeting-point the pace is always slow, as it is an object to bring the horses on the

ground as fresh as possible. Accordingly we keep at a walk almost all day, and the riders, having nothing else to do, assist the wranglers in driving the saddle band, three or four going in front, and others on the side, so that the horses shall keep on a walk. There is always some trouble with the animals at the starting out, as they are very fresh and are restive under the saddle. The herd is likely to stampede, and any beast that is frisky or vicious is sure to show its worst side. To do really effective cow work a pony should be well broken; but many even of the old ones have vicious traits, and almost every man will have in his string one or two young horses, or broncos, hardly broken at all. Thanks to the rough methods of breaking in vogue on the plains, many even of the so-called broken animals retain always certain bad habits, the most common being that of bucking. Of the sixty odd horses on my ranch all but half a dozen were broken by ourselves; and though my men are all good riders, yet a good rider is not necessarily a good horse-breaker, and indeed it was an absolute impossibility properly to break so many animals in the short time at our command—for we had to use them almost immediately after they were bought. In consequence, very many of my horses have to this day traits not likely to set a timid or a clumsy rider at his ease. One or two run away and cannot be held by even the strongest bit; others can hardly be bridled or saddled until they have been thrown; two or three have a tendency to fall over backward; and half of them buck more or less, some so hard that only an expert can sit them; several I never ride myself, save from dire necessity.

In riding these wild, vicious horses, and in careering over such very bad ground, especially at night, acci-

dents are always occurring. A man who is merely an ordinary rider is certain to have a pretty hard time. On my first round-up I had a string of nine horses, four of them broncos, only broken to the extent of having each been saddled once or twice. One of them it was an impossibility to bridle or to saddle single-handed; it was very difficult to get on or off him, and he was exceedingly nervous if a man moved his hands or feet; but he had no bad tricks. The second soon became perfectly quiet. The third turned out to be one of the worst buckers on the ranch: once, when he bucked me off, I managed to fall on a stone and broke a rib. The fourth had a still worse habit, for he would balk and then throw himself over backward: once, when I was not quick enough, he caught me and broke something in the point of my shoulder, so that it was some weeks before I could raise the arm freely. My hurts were far from serious, and did not interfere with my riding and working as usual through the round-up; but I was heartily glad when it ended, and ever since have religiously done my best to get none but gentle horses in my own string. However, every one gets falls from or with his horse now and then in the cow country; and even my men, good riders though they are, are sometimes injured. One of them once broke his ankle; another a rib; another was on one occasion stunned, remaining unconscious for some hours; and yet another had certain of his horses buck under him so hard and long as finally to hurt his lungs and make him cough blood. Fatal accidents occur annually in almost every district, especially if there is much work to be done among stampeded cattle at night; but on my own ranch none of my men have ever been seriously hurt, though on one occasion a cowboy from another ranch, who was

with my wagon, was killed, his horse falling and pitching him heavily on his head.

For bedding, each man has two or three pairs of blankets, and a tarpaulin or small wagon-sheet. Usually, two or three sleep together. Even in June the nights are generally cool and pleasant, and it is chilly in the early mornings; although this is not always so, and when the weather stays hot and mosquitoes are plenty, the hours of darkness, even in midsummer, seem painfully long. In the Bad Lands proper we are not often bothered very seriously by these winged pests; but in the low bottoms of the Big Missouri, and beside many of the reedy ponds and great sloughs out on the prairie, they are a perfect scourge. During the very hot nights, when they are especially active, the bedclothes make a man feel absolutely smothered, and yet his only chance for sleep is to wrap himself tightly up, head and all; and even then some of the pests will usually force their way in. At sunset I have seen the mosquitoes rise up from the land like a dense cloud, to make the hot, stifling night one long torture; the horses would neither lie down nor graze, travelling restlessly to and fro till daybreak, their bodies streaked and bloody, and the insects settling on them so as to make them all one color, a uniform gray; while the men, after a few hours' tossing about in the vain attempt to sleep, rose, built a little fire of damp sage-brush, and thus endured the misery as best they could until it was light enough to work.

But if the weather is fine, a man will never sleep better nor more pleasantly than in the open air after a hard day's work on the round-up; nor will an ordinary shower or gust of wind disturb him in the least, for he simply draws the tarpaulin over his head and goes on

sleeping. But now and then we have a wind-storm that might better be called a whirlwind and has to be met very differently; and two or three days or nights of rain insure the wetting of the blankets, and therefore shivering discomfort on the part of the would-be sleeper. For two or three hours all goes well; and it is rather soothing to listen to the steady patter of the great rain-drops on the canvas. But then it will be found that a corner has been left open through which the water can get in, or else the tarpaulin will begin to leak somewhere; or perhaps the water will have collected in a hollow underneath and have begun to soak through. Soon a little stream trickles in, and every effort to remedy matters merely results in a change for the worse. To move out of the way insures getting wet in a fresh spot; and the best course is to lie still and accept the evils that have come with what fortitude one can. Even thus, the first night a man can sleep pretty well; but if the rain continues, the second night, when the blankets are already damp and when the water comes through more easily, is apt to be most unpleasant.

Of course a man can take little spare clothing on a round-up; at the very outside two or three clean handkerchiefs, a pair of socks, a change of underclothes, and the most primitive kind of washing apparatus, all wrapped up in a stout jacket which is to be worn when night-herding. The inevitable "slicker," or oilskin coat, which gives complete protection from the wet, is always carried behind the saddle.

At the meeting-place there is usually a delay of a day or two to let every one come in; and the plain on which the encampment is made becomes a scene of great bustle and turmoil. The heavy four-horse wagons

jolt in from different quarters, the horse-wranglers rushing madly to and fro in the endeavor to keep the different saddle bands from mingling, while the "riders," or cowboys, with each wagon jog along in a body. The representatives from outside districts ride in singly or by twos and threes, every man driving before him his own horses, one of them loaded with his bedding. Each wagon wheels out of the way into some camping-place not too near the others, the bedding is tossed out on the ground, and then every one is left to do what he wishes, while the different wagon bosses, or foremen, seek out the captain of the round-up to learn what his plans are.

There is a good deal of rough but effective discipline and method in the way in which a round-up is carried on. The captain of the whole has as lieutenants the various wagon foremen, and in making demands for men to do some special service he will usually merely designate some foreman to take charge of the work and let him parcel it out among his men to suit himself. The captain of the round-up or the foreman of a wagon may himself be a ranchman; if such is not the case, and the ranchman nevertheless comes along, he works and fares precisely as do the other cowboys.

While the head men are gathered in a little knot, planning out the work, the others are dispersed over the plain in every direction, racing, breaking rough horses, or simply larking with one another. If a man has an especially bad horse, he usually takes such an opportunity, when he has plenty of time, to ride him; and while saddling he is surrounded by a crowd of most unsympathetic associates, who greet with uproarious mirth any misadventure. A man on a bucking horse is always considered fair game, every squeal and jump

of the bronco being hailed with cheers of delighted irony for the rider and shouts to "stay with him." The antics of a vicious bronco show infinite variety of detail, but are all modelled on one general plan. When the rope settles round his neck the fight begins, and it is only after much plunging and snorting that a twist is taken over his nose, or else a hackamore—a species of severe halter, usually made of plaited hair—slipped on his head. While being bridled he strikes viciously with his forefeet, and perhaps has to be blindfolded or thrown down; and to get the saddle on him is quite as difficult. When saddled, he may get rid of his exuberant spirits by bucking under the saddle, or may reserve all his energies for the rider. In the last case, the man, keeping tight hold with his left hand of the cheek-strap, so as to prevent the horse from getting his head down until he is fairly seated, swings himself quickly into the saddle. Up rises the bronco's back into an arch; his head, the ears laid straight back, goes down between his forefeet, and, squealing savagely, he makes a succession of rapid, stiff-legged, jarring bounds. Sometimes he is a "plunging" bucker, who runs forward all the time while bucking; or he may buck steadily in one place, or "sunfish"—that is, bring first one shoulder down almost to the ground and then the other—or else he may change ends while in the air. A first-class rider will sit throughout it all without moving from the saddle, quirting* his horse all the time, though his hat may be jarred off his head and his revolver out of its sheath. After a few jumps, however, the average man grasps hold of the horn of the saddle—the delighted onlookers meanwhile earnestly advising him not to

* Quirt is the name of the short flexible riding-whip used throughout cowboy land. The term is a Spanish one.

"go to leather"—and is contented to get through the affair in any shape provided he can escape without being thrown off. An accident is of necessity borne with a broad grin, as any attempt to resent the raillery of the bystanders—which is perfectly good-humored—would be apt to result disastrously. Cowboys are certainly extremely good riders. As a class they have no superiors. Of course they would at first be at a disadvantage in steeplechasing or fox-hunting, but their average of horsemanship is without doubt higher than that of the men who take part in these latter amusements. A cowboy would learn to ride across country in a quarter of the time it would take a cross-country rider to learn to handle a vicious bronco or to do good cow work round and in a herd.

On such a day, when there is no regular work, there will often also be horse-races, as each outfit is pretty sure to have some running pony which it believes can outpace any other. These contests are always short-distance dashes, for but a few hundred yards. Horse-racing is a mania with most plainsmen, white or red. A man with a good racing pony will travel all about with it, often winning large sums, visiting alike cow-ranches, frontier towns, and Indian encampments. Sometimes the race is "pony against pony," the victor taking both steeds. In racing the men ride bareback, as there are hardly any light saddles in the cow country. There will be intense excitement and very heavy betting over a race between two well-known horses, together with a good chance of blood being shed in the attendant quarrels. Indians and whites often race against each other as well as among themselves. I have seen several such contests, and in every case but one the white man happened to win. A race is usually

run between two thick rows of spectators, on foot and on horseback, and as the racers pass, these rows close in behind them, every man yelling and shouting with all the strength of his lungs, and all waving their hats and cloaks to encourage the contestants, or firing off their revolvers and saddle guns. The little horses are fairly maddened, as is natural enough, and run as if they were crazy: were the distances longer some would be sure to drop in their tracks.

Besides the horse-races, which are, of course, the main attraction, the men at a round-up will often get up wrestling-matches or foot-races. In fact, every one feels that he is off for a holiday; for after the monotony of a long winter, the cowboys look forward eagerly to the round-up, where the work is hard, it is true, but exciting and varied, and treated a good deal as a frolic. There is no eight-hour law in cowboy land: during round-up time we often count ourselves lucky if we get off with much less than sixteen hours; but the work is done in the saddle, and the men are spurred on all the time by the desire to outdo one another in feats of daring and skilful horsemanship. There is very little quarrelling or fighting; and though the fun often takes the form of rather rough horse-play, yet the practice of carrying dangerous weapons makes cowboys show far more rough courtesy to each other and far less rudeness to strangers than is the case among, for instance, Eastern miners, or even lumbermen. When a quarrel may very probably result fatally, a man thinks twice before going into it: warlike people or classes always treat one another with a certain amount of consideration and politeness. The moral tone of a cow camp, indeed, is rather high than otherwise. Meanness, cowardice, and dishonesty are not tolerated.

There is a high regard for truthfulness and keeping one's word, intense contempt for any kind of hypocrisy, and a hearty dislike for a man who shirks his work. Many of the men gamble and drink, but many do neither; and the conversation is not worse than in most bodies composed wholly of male human beings. A cowboy will not submit tamely to an insult, and is ever ready to avenge his own wrongs; nor has he an overwrought fear of shedding blood. He possesses, in fact, few of the emasculated, milk-and-water moralities admired by the pseudophilanthropists; but he does possess, to a very high degree, the stern, manly qualities that are invaluable to a nation.

The method of work is simple. The mess wagons and loose horses, after breaking camp in the morning, move on in a straight line for some few miles, going into camp again before midday; and the day herd, consisting of all the cattle that have been found far off their range and which are to be brought back there, and of any others that it is necessary to gather, follows on afterward. Meanwhile the cowboys scatter out and drive in all the cattle from the country round about, going perhaps ten or fifteen miles back from the line of march, and meeting at the place where camp has already been pitched. The wagons always keep some little distance from one another, and the saddle bands do the same, so that the horses may not get mixed. It is rather picturesque to see the four-horse teams filing down at a trot through a pass among the buttes—the saddle bands being driven along at a smart pace to one side or behind, the teamsters cracking their whips, and the horse-wranglers calling and shouting as they ride rapidly from side to side behind the horses, urging on the stragglers by dexterous touches with the knotted

ends of their long lariats that are left trailing from the saddle. The country driven over is very rough, and it is often necessary to double up teams and put on eight horses to each wagon in going up an unusually steep pitch, or hauling through a deep mud-hole, or over a river-crossing where there is quicksand.

The speed and thoroughness with which a country can be worked depends, of course, very largely upon the number of riders. Ours is probably about an average round-up as regards size. The last spring I was out, there were half a dozen wagons along; the saddle bands numbered about a hundred each; and the morning we started, sixty men in the saddle splashed across the shallow ford of the river that divided the plain where we had camped from the valley of the long winding creek up which we were first to work.

In the morning the cook is preparing breakfast long before the first glimmer of dawn. As soon as it is ready, probably about three o'clock, he utters a long-drawn shout, and all the sleepers feel it is time to be up on the instant, for they know there can be no such thing as delay on the round-up, under penalty of being set afoot. Accordingly, they bundle out, rubbing their eyes and yawning, draw on their boots and trousers—if they have taken the latter off—roll up and cord their bedding, and usually without any attempt at washing crowd over to the little smouldering fire, which is placed in a hole dug in the ground, so that there may be no risk of its spreading. The men are rarely very hungry at breakfast, and it is a meal that has to be eaten in shortest order, so it is perhaps the least important. Each man, as he comes up, grasps a tin cup and plate from the mess box, pours out his tea or coffee, with sugar, but, of course, no milk, helps himself to one or

two of the biscuits that have been baked in a Dutch oven, and perhaps also to a slice of the fat pork swimming in the grease of the frying-pan, ladles himself out some beans, if there are any, and squats down on the ground to eat his breakfast. The meal is not an elaborate one; nevertheless a man will have to hurry if he wishes to eat it before hearing the foreman sing out, "Come, boys, catch your horses"; when he must drop everything and run out to the wagon with his lariat. The night wrangler is now bringing in the saddle band, which he has been up all night guarding. A rope corral is rigged up by stretching a rope from each wheel of one side of the wagon, making a V-shaped space, into which the saddle-horses are driven. Certain men stand around to keep them inside, while the others catch the horses: many outfits have one man to do all the roping. As soon as each has caught his horse—usually a strong, tough animal, the small, quick ponies being reserved for the work round the herd in the afternoon—the band, now in charge of the day wrangler, is turned loose, and every one saddles up as fast as possible. It still lacks some time of being sunrise, and the air has in it the peculiar chill of the early morning. When all are saddled, many of the horses bucking and dancing about, the riders from the different wagons all assemble at the one where the captain is sitting, already mounted. He waits a very short time—for laggards receive but scant mercy—before announcing the proposed camping-place and parcelling out the work among those present. If, as is usually the case, the line of march is along a river or creek, he appoints some man to take a dozen others and drive down (or up) it ahead of the day herd, so that the latter will not have to travel through other cattle; the day herd itself being

driven and guarded by a dozen men detached for that purpose. The rest of the riders are divided into two bands, placed under men who know the country, and start out, one on each side, to bring in every head for fifteen miles back. The captain then himself rides down to the new camping-place, so as to be there as soon as any cattle are brought in.

Meanwhile the two bands, a score of riders in each, separate and make their way in opposite directions. The leader of each tries to get such a "scatter" on his men that they will cover completely all the land gone over. This morning work is called circle riding, and is peculiarly hard in the Bad Lands on account of the remarkably broken, rugged nature of the country. The men come in on lines that tend to a common centre—as if the sticks of a fan were curved. As the band goes out, the leader from time to time detaches one or two men to ride down through certain sections of the country, making the shorter, or what are called inside, circles, while he keeps on; and finally, retaining as companions the two or three whose horses are toughest, makes the longest or outside circle himself, going clear back to the divide, or whatever the point may be that marks the limit of the round-up work, and then turning and working straight to the meeting-place. Each man, of course, brings in every head of cattle he can see.

These long, swift rides in the glorious spring mornings are not soon to be forgotten. The sweet, fresh air, with a touch of sharpness thus early in the day, and the rapid motion of the fiery little horse combine to make a man's blood thrill and leap with sheer buoyant light-heartedness and eager, exultant pleasure in the boldness and freedom of the life he is leading. As we climb the steep sides of the first range of buttes, wisps

of wavering mist still cling in the hollows of the valley; when we come out on the top of the first great plateau, the sun flames up over its edge, and in the level, red beams the galloping horsemen throw long, fantastic shadows. Black care rarely sits behind a rider whose pace is fast enough; at any rate, not when he first feels the horse move under him.

Sometimes we trot or pace, and again we lope or gallop; the few who are to take the outside circle must needs ride both hard and fast. Although only grass-fed, the horses are tough and wiry; and, moreover, are each used but once in four days, or thereabouts, so they stand the work well. The course out lies across great grassy plateaus, along knife-like ridge crests, among winding valleys and ravines, and over acres of barren, sun-scorched buttes, that look grimly grotesque and forbidding, while in the Bad Lands the riders unhesitatingly go down and over places where it seems impossible that a horse should even stand. The line of horsemen will quarter down the side of a butte, where every pony has to drop from ledge to ledge like a goat, and will go over the shoulder of a soapstone cliff, when wet and slippery, with a series of plunges and scrambles which if unsuccessful would land horses and riders in the bottom of the canyon-like washout below. In descending a clay butte after a rain, the pony will put all four feet together and slide down to the bottom almost or quite on his haunches. In very wet weather the Bad Lands are absolutely impassable; but if the ground is not slippery, it is a remarkable place that can shake the matter-of-course confidence felt by the rider in the capacity of his steed to go anywhere.

When the men on the outside circle have reached the bound set them—whether it is a low divide, a group of

jagged hills, the edge of the rolling, limitless prairie, or the long, waste reaches of alkali and sage-brush—they turn their horses' heads and begin to work down the branches of the creeks, one or two riding down the bottom, while the others keep off to the right and the left, a little ahead and fairly high up on the side-hills, so as to command as much of a view as possible. On the level or rolling prairies the cattle can be seen a long way off, and it is an easy matter to gather and to drive them; but in the Bad Lands every little pocket, basin, and coulée has to be searched, every gorge or ravine entered, and the dense patches of brushwood and spindling, wind-beaten trees closely examined. All the cattle are carried on ahead down the creek; and it is curious to watch the different behavior of the different breeds. A cowboy riding off to one side of the creek, and seeing a number of long-horned Texans grazing in the branches of a set of coulées, has merely to ride across the upper ends of these, uttering the drawn-out "ei-koh-h-h," so familiar to the cattlemen, and the longhorns will stop grazing, stare fixedly at him, and then, wheeling, strike off down the coulées at a trot, tails in air, to be carried along by the centre riders when they reach the main creek into which the coulées lead. Our own range cattle are not so wild, but nevertheless are easy to drive; while Eastern-raised beasts have little fear of a horseman, and merely stare stupidly at him until he rides directly toward them. Every little bunch of stock is thus collected, and all are driven along together. At the place where some large fork joins the main creek another band may be met, driven by some of the men who have left earlier in the day to take one of the shorter circles; and thus, before coming down to the bottom where the wagons are camped

and where the actual "round-up" itself is to take place, this one herd may include a couple of thousand head; or, on the other hand, the longest ride may not result in the finding of a dozen animals. As soon as the riders are in, they disperse to their respective wagons to get dinner and change horses, leaving the cattle to be held by one or two of their number. If only a small number of cattle have been gathered, they will all be run into one herd; if there are many of them, however, the different herds will be held separate.

A plain where a round-up is taking place offers a picturesque sight. I well remember one such. It was on a level bottom in a bend of the river, which here made an almost semicircular sweep. The bottom was in shape a long oval, hemmed in by an unbroken line of steep bluffs so that it looked like an amphitheatre. Across the faces of the dazzling white cliffs there were sharp bands of black and red, drawn by the coal seams and the layers of burned clay: the leaves of the trees and the grass had the vivid green of springtime. The wagons were camped among the cottonwood-trees fringing the river, a thin column of smoke rising up from beside each. The horses were grazing round the outskirts, those of each wagon by themselves and kept from going too near the others by their watchful guard. In the great circular corral, toward one end, the men were already branding calves, while the whole middle of the bottom was covered with lowing herds of cattle and shouting, galloping cowboys. Apparently there was nothing but dust, noise, and confusion; but in reality the work was proceeding all the while with the utmost rapidity and certainty.

As soon as, or even before, the last circle riders have come in and have snatched a few hasty mouthfuls to

serve as their midday meal, we begin to work the herd—or herds, if the one herd would be of too unwieldy size. The animals are held in a compact bunch, most of the riders forming a ring outside, while a couple from each ranch successively look the herds through and cut out those marked with their own brand. It is difficult, in such a mass of moving beasts—for they do not stay still, but keep weaving in and out among each other—to find all of one's own animals: a man must have natural gifts, as well as great experience, before he becomes a good brand-reader and is able really to "clean up a herd"—that is, be sure he has left nothing of his own in it.

To do good work in cutting out from a herd, not only should the rider be a good horseman, but he should also have a skilful, thoroughly trained horse. A good cutting pony is not common, and is generally too valuable to be used anywhere but in the herd. Such a one enters thoroughly into the spirit of the thing, and finds out immediately the animal his master is after; he will then follow it closely of his own accord through every wheel and double at top speed. When looking through the herd, it is necessary to move slowly; and when any animal is found, it is taken to the outskirts at a walk, so as not to alarm the others. Once at the outside, however, the cowboy has to ride like lightning; for as soon as the beast he is after finds itself separated from its companions it endeavors to break back among them, and a young range-raised steer or heifer runs like a deer. In cutting out a cow and a calf two men have to work together. As the animals of a brand are cut out they are received and held apart by some rider detailed for the purpose, who is said to be "holding the cut."

All this time the men holding the herd have their hands full, for some animal is continually trying to break out, when the nearest man flies at it at once and after a smart chase brings it back to its fellows. As soon as all the cows, calves, and whatever else is being gathered have been cut out, the rest are driven clear off the ground and turned loose, being headed in the direction contrary to that in which we travel the following day. Then the riders surround the next herd, the men holding cuts move them up near it, and the work is begun anew.

If it is necessary to throw an animal, either to examine a brand or for any other reason, half a dozen men will have their ropes down at once; and then it is spur and quirt in the rivalry to see which can outdo the other until the beast is roped and thrown. A first-class hand will, unaided, rope, throw, and tie down a cow or steer in wonderfully short time; one of the favorite tests of competitive skill among the cowboys is the speed with which this feat can be accomplished. Usually, however, one man ropes the animal by the head and another at the same time gets the loop of his lariat over one or both its hind legs, when it is twisted over and stretched out in a second. In following an animal on horseback the man keeps steadily swinging the rope round his head, by a dexterous motion of the wrist only, until he gets a chance to throw it; when on foot, especially if catching horses in a corral, the loop is allowed to drag loosely on the ground. A good roper will hurl out the coil with marvellous accuracy and force; it fairly whistles through the air, and settles round the object with almost infallible certainty. Mexicans make the best ropers; but some Texans are very little behind them. A good horse takes as much

interest in the work as does his rider, and the instant the noose settles over the victim, wheels and braces himself to meet the shock, standing with his legs firmly planted, the steer or cow being thrown with a jerk. An unskilful rider and untrained horse will often themselves be thrown when the strain comes.

Sometimes an animal—usually a cow or steer, but, strangely enough, very rarely a bull—will get fighting mad, and turn on the men. If on the drive, such a beast usually is simply dropped out; but if they have time, nothing delights the cowboys more than an encounter of this sort, and the charging brute is roped and tied down in short order. Often such a one will make a very vicious fight, and is most dangerous. Once a fighting cow kept several of us busy for nearly an hour; she gored two ponies, one of them, which was, luckily, hurt but slightly, being my own pet cutting horse. If a steer is hauled out of a mud-hole, its first act is usually to charge the rescuer.

As soon as all the brands of cattle are worked, and the animals that are to be driven along have been put in the day herd, attention is turned to the cows and calves which are already gathered in different bands, consisting each of all the cows of a certain brand and all the calves that are following them. If there is a corral, each band is in turn driven into it; if there is none, a ring of riders does duty in its place. A fire is built, the irons heated, and a dozen men dismount to, as it is called, "wrestle" the calves. The best two ropers go in on their horses to catch the latter; one man keeps tally, a couple put on the brands, and the others seize, throw, and hold the little unfortunates. A first-class roper invariably catches the calf by both hind feet, and then, having taken a twist with his lariat

round the horn of the saddle, drags the bawling little creature, extended at full length, up to the fire, where it is held before it can make a struggle. A less skilful roper catches round the neck, and then, if the calf is a large one, the man who seizes it has his hands full, as the bleating, bucking animal develops astonishing strength, cuts the wildest capers, and resists frantically and with all its power. If there are seventy or eighty calves in a corral, the scene is one of the greatest confusion. The ropers, spurring and checking the fierce little horses, drag the calves up so quickly that a dozen men can hardly hold them; the men with the irons, blackened with soot, run to and fro; the calf-wrestlers, grimy with blood, dust, and sweat, work like beavers; while with the voice of a stentor the tallyman shouts out the number and sex of each calf. The dust rises in clouds, and the shouts, cheers, curses, and laughter of the men unite with the lowing of the cows and the frantic bleating of the roped calves to make a perfect babel. Now and then an old cow turns vicious and puts every one out of the corral. Or a *maverick* bull—that is, an unbranded bull—a yearling or a two-year-old, is caught, thrown, and branded; when he is let up there is sure to be a fine scatter. Down goes his head, and he bolts at the nearest man, who makes out of the way at top speed, amidst roars of laughter from all of his companions; while the men holding down calves swear savagely as they dodge charging mavericks, trampling horses, and taut lariats with frantic, plunging little beasts at the farther ends.

Every morning certain riders are detached to drive and to guard the day herd, which is most monotonous work, the men being on from four in the morning till eight in the evening, the only rest coming at dinner-time,

when they change horses. When the herd has reached the camping-ground there is nothing to do but to loll listlessly over the saddle-bow in the blazing sun watching the cattle feed and sleep, and seeing that they do not spread out too much. Plodding slowly along on the trail through the columns of dust stirred up by the hoofs is not much better. Cattle travel best and fastest strung out in long lines; the swiftest taking the lead in single file, while the weak and the lazy, the young calves and the poor cows, crowd together in the rear. Two men travel along with the leaders, one on each side, to point them in the right direction; one or two others keep by the flanks, and the rest are in the rear to act as "drag-drivers" and hurry up the phalanx of reluctant weaklings. If the foremost of the string travels too fast, one rider will go along on the trail a few rods ahead, and thus keep them back so that those in the rear will not be left behind.

Generally all this is very tame and irksome; but by fits and starts there will be little flurries of excitement. Two or three of the circle riders may unexpectedly come over a butte near by with a bunch of cattle, which at once start for the day herd, and then there will be a few minutes' furious riding hither and thither to keep them out. Or the cattle may begin to run, and then get "milling"—that is, all crowd together into a mass like a ball, wherein they move round and round, trying to keep their heads toward the centre, and refusing to leave it. The only way to start them is to force one's horse in among them and cut out some of their number, which then begin to travel off by themselves, when the others will probably follow. But in spite of occasional incidents of this kind, day-herding has a dreary sameness about it that makes the men dislike and seek to avoid it.

From eight in the evening till four in the morning the day herd becomes a night herd. Each wagon in succession undertakes to guard it for a night, dividing the time into watches of two hours apiece, a couple of riders taking each watch. This is generally chilly and tedious; but at times it is accompanied by intense excitement and danger, when the cattle become stampeded, whether by storm or otherwise. The first and the last watches are those chosen by preference; the others are disagreeable, the men having to turn out cold and sleepy, in the pitchy darkness, the two hours of chilly wakefulness completely breaking the night's rest. The first guards have to bed the cattle down, though the day-herders often do this themselves: it simply consists in hemming them into as small a space as possible, and then riding round them until they lie down and fall asleep. Often, especially at first, this takes some time —the beasts will keep rising and lying down again. When at last most become quiet, some perverse brute of a steer will deliberately hook them all up; they keep moving in and out among one another, and long strings of animals suddenly start out from the herd at a stretching walk, and are turned back by the nearest cowboy, only to break forth at a new spot. When finally they have lain down and are chewing their cud or slumbering, the two night guards begin riding round them in opposite ways, often, on very dark nights, calling or singing to them, as the sound of the human voice on such occasions seems to have a tendency to quiet them. In inky-black weather, especially when rainy, it is both difficult and unpleasant work; the main trust must be placed in the horse, which, if old at the business, will of its own accord keep pacing steadily round the herd and head off any animals that, unseen by the rider's

eyes in the darkness, are trying to break out. Usually the watch passes off without incident, but on rare occasions the cattle become restless and prone to stampede. Anything may then start them—the plunge of a horse, the sudden approach of a coyote, or the arrival of some outside steers or cows that have smelt them and come up. Every animal in the herd will be on its feet in an instant, as if by an electric shock, and off with a rush, horns and tail up. Then, no matter how rough the ground nor how pitchy black the night, the cowboys must ride for all there is in them and spare neither their own nor their horses' necks. Perhaps their charges break away and are lost altogether; perhaps, by desperate galloping, they may head them off, get them running in a circle, and finally stop them. Once stopped they may break again, and possibly divide up, one cowboy, perhaps, following each band. I have known six such stops and renewed stampedes to take place in one night, the cowboy staying with his ever-diminishing herd of steers until daybreak, when he managed to get them under control again, and, by careful humoring of his jaded, staggering horse, finally brought those that were left back to the camp, several miles distant. The riding in these night stampedes is wild and dangerous to a degree, especially if the man gets caught in the rush of the beasts. It also frequently necessitates an immense amount of work in collecting the scattered animals. On one such occasion a small party of us were thirty-six hours in the saddle, dismounting only to change horses or to eat. We were almost worn out at the end of the time; but it must be kept in mind that for a long spell of such work a stock-saddle is far less tiring than the ordinary Eastern or English one, and in every way superior to it.

By very hard riding, such a stampede may sometimes be prevented. Once we were bringing a thousand head of young cattle down to my lower ranch, and as the river was high were obliged to take the inland trail. The third night we were forced to make a dry camp, the cattle having had no water since the morning. Nevertheless, we got them bedded down without difficulty, and one of the cowboys and myself stood first guard. But very soon after nightfall, when the darkness had become complete, the thirsty brutes of one accord got on their feet and tried to break out. The only salvation was to keep them close together, as, if they once got scattered, we knew they could never be gathered; so I kept on one side, and the cowboy on the other, and never in my life did I ride so hard. In the darkness I could but dimly see the shadowy outlines of the herd, as with whip and spurs I ran the pony along its edge, turning back the beasts at one point barely in time to wheel and keep them in at another. The ground was cut up by numerous little gullies, and each of us got several falls, horses and riders turning complete somersaults. We were dripping with sweat, and our ponies quivering and trembling like quaking aspens, when, after more than an hour of the most violent exertion, we finally got the herd quieted again.

On another occasion while with the round-up we were spared an excessively unpleasant night only because there happened to be two or three great corrals not more than a mile or so away. All day long it had been raining heavily, and we were well drenched; but toward evening it lulled a little, and the day herd, a very large one, of some two thousand head, was gathered on an open bottom. We had turned the horses loose, and in our oilskin slickers cowered, soaked and comfortless,

under the lee of the wagon, to take a meal of damp bread and lukewarm tea, the sizzling embers of the fire having about given up the ghost after a fruitless struggle with the steady downpour. Suddenly the wind began to come in quick, sharp gusts, and soon a regular blizzard was blowing, driving the rain in stinging level sheets before it. Just as we were preparing to turn into bed with the certainty of a night of more or less chilly misery ahead of us, one of my men, an iron-faced personage, who no one would ever have dreamed had a weakness for poetry, looked toward the plain where the cattle were, and remarked: "I guess there's 'racing and chasing on Cannobie Lea' now, sure." Following his gaze, I saw that the cattle had begun to drift before the storm, the night guards being evidently unable to cope with them, while at the other wagons riders were saddling in hot haste and spurring off to their help through the blinding rain. Some of us at once ran out to our own saddle band. All of the ponies were standing huddled together, with their heads down and their tails to the wind. They were wild and restive enough usually; but the storm had cowed them, and we were able to catch them without either rope or halter. We made quick work of saddling; and the second each man was ready, away he loped through the dusk, splashing and slipping in the pools of water that studded the muddy plain. Most of the riders were already out when we arrived. The cattle were gathered in a compact, wedge-shaped, or rather fan-shaped, mass, with their tails to the wind—that is, toward the thin end of the wedge or fan. In front of this fan-shaped mass of frightened, maddened beasts was a long line of cowboys, each muffled in his slicker and with his broad hat pulled down over his eyes, to shield him from the pelting

rain. When the cattle were quiet for a moment every horseman at once turned round with his back to the wind, and the whole line stood as motionless as so many sentries. Then, if the cattle began to spread out and overlap at the ends, or made a rush and broke through at one part of the lines, there would be a change into wild activity. The men, shouting and swaying in their saddles, darted to and fro with reckless speed, utterly heedless of danger—now racing to the threatened point, now checking and wheeling their horses so sharply as to bring them square on their haunches, or even throw them flat down, while the hoofs ploughed long furrows in the slippery soil, until, after some minutes of this mad galloping hither and thither, the herd, having drifted a hundred yards or so, would be once more brought up standing. We always had to let them drift a little to prevent their spreading out too much. The din of the thunder was terrific, peal following peal until they mingled in one continuous, rumbling roar; and at every thunder-clap louder than its fellows the cattle would try to break away. Darkness had set in, but each flash of lightning showed us a dense array of tossing horns and staring eyes. It grew always harder to hold in the herd; but the drift took us along to the corrals already spoken of, whose entrances were luckily to windward. As soon as we reached the first we cut off part of the herd, and turned it within; and after again doing this with the second, we were able to put all the remaining animals into the third. The instant the cattle were housed five-sixths of the horsemen started back at full speed for the wagons; the rest of us barely waited to put up the bars and make the corrals secure before galloping after them. We had to ride right in the teeth of the driving storm; and once at the wagons we made

small delay in crawling under our blankets, damp though the latter were, for we were ourselves far too wet, stiff, and cold not to hail with grateful welcome any kind of shelter from the wind and the rain.

All animals were benumbed by the violence of this gale of cold rain: a prairie-chicken rose from under my horse's feet so heavily that, thoughtlessly striking at it, I cut it down with my whip; while when a jack-rabbit got up ahead of us, it was barely able to limp clumsily out of our way.

But though there is much work and hardship, rough fare, monotony, and exposure connected with the round-up, yet there are few men who do not look forward to it and back to it with pleasure. The only fault to be found is that the hours of work are so long that one does not usually have enough time to sleep. The food, if rough, is good: beef, bread, pork, beans, coffee or tea, always canned tomatoes, and often rice, canned corn, or sauce made from dried apples. The men are good-humored, bold, and thoroughly interested in their business, continually vying with one another in the effort to see which can do the work best. It is superbly health-giving, and is full of excitement and adventure, calling for the exhibition of pluck, self-reliance, hardihood, and dashing horsemanship; and of all forms of physical labor the easiest and pleasantest is to sit in the saddle.

V

WINTER WEATHER

When the days have dwindled to their shortest, and the nights seem never-ending, then all the great northern plains are changed into an abode of iron desolation. Sometimes furious gales blow out of the north, driving before them the clouds of blinding snow-dust, wrapping the mantle of death round every unsheltered being that faces their unshackled anger. They roar in a thunderous bass as they sweep across the prairie or whirl through the naked canyons; they shiver the great brittle cottonwoods, and beneath their rough touch the icy limbs of the pines that cluster in the gorges sing like the chords of an Æolian harp. Again, in the coldest midwinter weather, not a breath of wind may stir; and then the still, merciless, terrible cold that broods over the earth like the shadow of silent death seems even more dreadful in its gloomy rigor than is the lawless madness of the storms. All the land is like granite; the great rivers stand still in their beds, as if turned to frosted steel. In the long nights there is no sound to break the lifeless silence. Under the ceaseless, shifting play of the Northern Lights, or lighted only by the wintry brilliance of the stars, the snow-clad plains stretch out into dead and endless wastes of glimmering white.

Then the great fireplace of the ranch-house is choked with blazing logs, and at night we have to sleep under so many blankets that the weight is fairly oppressive. Outside, the shaggy ponies huddle together in the corral, while long icicles hang from their lips, and the hoar-

frost whitens the hollow backs of the cattle. For the ranchman the winter is occasionally a pleasant holiday, but more often an irksome period of enforced rest and gloomy foreboding.

In the winter there is much less work than at any other season, but what there is involves great hardship and exposure. Many of the men are discharged after the summer is over, and during much of the cold weather there is little to do except hunt now and then, and in very bitter days lounge listlessly about the house. But some of the men are out in the line camps, and the ranchman has occasionally to make the round of these; and besides that, one or more of the cowboys who are at home ought to be out every day when the cattle have become weak, so as to pick up and drive in any beast that will otherwise evidently fail to get through the season—a cow that has had an unusually early calf being particularly apt to need attention. The horses shift for themselves and need no help. Often, in winter, the Indians cut down the cottonwood-trees and feed the tops to their ponies; but this is not done to keep them from starving, but only to keep them from wandering off in search of grass. Besides, the ponies are very fond of the bark of the young cottonwood shoots, and it is healthy for them.

The men in the line camps lead a hard life, for they have to be out in every kind of weather, and should be especially active and watchful during the storms. The camps are established along some line which it is proposed to make the boundary of the cattle's drift in a given direction. For example, we care very little whether our cattle wander to the Yellowstone; but we strongly object to their drifting east and southeast toward the granger country and the Sioux reservation,

especially as when they drift that way they come out on flat, bare plains where there is danger of perishing. Accordingly, the cowmen along the Little Missouri have united in establishing a row of camps to the east of the river, along the line where the broken ground meets the prairie. The camps are usually for two men each, and some fifteen or twenty miles apart; then, in the morning, its two men start out in opposite ways, each riding till he meets his neighbor of the next camp nearest on that side, when he returns. The camp itself is sometimes merely a tent pitched in a sheltered coulée, but ought to be either made of logs or else a dugout in the ground. A small corral and horse-shed is near by, with enough hay for the ponies, of which each rider has two or three. In riding over the beat each man drives any cattle that have come near it back into the Bad Lands, and if he sees by the hoof-marks that a few have strayed out over the line very recently, he will follow and fetch them home. They must be shoved well back into the Bad Lands before a great storm strikes them; for if they once begin to drift in masses before an icy gale it is impossible for a small number of men to hold them, and the only thing is to let them go, and then to organize an expedition to follow them as soon as possible. Line-riding is very cold work, and dangerous too, when the men have to be out in a blinding snow-storm, or in a savage blizzard that takes the spirit in the thermometer far down below zero. In the worst storms it is impossible for any man to be out.

But other kinds of work besides line-riding necessitate exposure to bitter weather. Once, while spending a few days over on Beaver Creek hunting up a lost horse, I happened to meet a cowboy who was out on the same errand, and made friends with him. We started

home together across the open prairies, but were caught in a very heavy snow-storm almost immediately after leaving the ranch where we had spent the night. We were soon completely turned round, the great soft flakes—for, luckily, it was not cold—almost blinding us, and we had to travel entirely by compass. After feeling our way along for eight or nine hours, we finally got down into the broken country near Sentinel Butte and came across an empty hut, a welcome sight to men as cold, hungry, and tired as we were. In this hut we passed the night very comfortably, picketing our horses in a sheltered nook near by, with plenty of hay from an old stack. To while away the long evening, I read "Hamlet" aloud, from a little pocket "Shakespeare." The cowboy, a Texan—one of the best riders I have seen, and also a very intelligent as well as a thoroughly good fellow in every way—was greatly interested in it and commented most shrewdly on the parts he liked, especially Polonius's advice to Laertes, which he translated into more homely language with great relish, and ended with the just criticism that "old Shakespeare saveyed human natur' some"—savey being a verb presumably adapted into the limited plains' vocabulary from the Spanish.

Even for those who do not have to look up stray horses, and who are not forced to ride the line day in and day out, there is apt to be some hardship and danger in being abroad during the bitter weather; yet a ride in midwinter is certainly fascinating. The great white country wrapped in the powdery snow-drift seems like another land; and the familiar landmarks are so changed that a man must be careful lest he lose his way, for the discomfort of a night in the open during such weather is very great indeed. When the sun is out the

glare from the endless white stretches dazzles the eyes; and if the gray snow-clouds hang low and only let a pale, wan light struggle through, the lonely wastes become fairly appalling in their desolation. For hour after hour a man may go on and see no sign of life except, perhaps, a big white owl sweeping noiselessly by, so that in the dark it looks like a snow-wreath; the cold gradually chilling the rider to the bones, as he draws his fur cap tight over his ears and muffles his face in the huge collar of his wolfskin coat, and making the shaggy little steed drop head and tail as it picks its way over the frozen soil. There are few moments more pleasant than the home-coming, when, in the gathering darkness, after crossing the last chain of ice-covered buttes, or after coming round the last turn in the wind-swept valley, we see, through the leafless trees, or across the frozen river, the red gleam of the firelight as it shines through the ranch windows and flickers over the trunks of the cottonwoods outside, warming a man's blood by the mere hint of the warmth awaiting him within.

The winter scenery is especially striking in the Bad Lands, with their queer, fantastic formations. Among the most interesting features are the burning mines. These are formed by the coal seams that get on fire. They vary greatly in size. Some send up smoke-columns that are visible miles away, while others are not noticeable a few rods off. The old ones gradually burn away, while new ones unexpectedly break out. Thus, last fall, one suddenly appeared but half a mile from the ranch-house. We never knew it was there until one cold moonlight night, when we were riding home, we rounded the corner of a ravine and saw in our path a tall white column of smoke rising from a rift in the

snowy crags ahead of us. As the trail was over perfectly familiar ground, we were for a moment almost as startled as if we had seen a ghost.

The burning mines are uncanny places, anyhow. A strong smell of sulphur hangs round them, the heated earth crumbles and cracks, and through the long clefts that form in it we can see the lurid glow of the subterranean fires, with here and there tongues of blue or cherry colored flame dancing up to the surface.

The winters vary greatly in severity with us. During some seasons men can go lightly clad even in January and February, and the cattle hardly suffer at all; during others there will be spells of bitter weather, accompanied by furious blizzards, which render it impossible for days and weeks at a time for men to stir out-of-doors at all, save at the risk of their lives. Then line-rider, ranchman, hunter, and teamster alike all have to keep within doors. I have known of several cases of men freezing to death when caught in shelterless places by such a blizzard, a strange fact being that in about half of them the doomed man had evidently gone mad before dying, and had stripped himself of most of his clothes, the body when found being nearly naked. On our ranch we have never had any bad accidents, although every winter some of us get more or less frost-bitten. My last experience in this line was while returning by moonlight from a successful hunt after mountain-sheep. The thermometer was twenty-six degrees below zero, and we had had no food for twelve hours. I became numbed, and before I was aware of it had frozen my face, one foot, both knees, and one hand. Luckily, I reached the ranch before serious damage was done.

About once every six or seven years we have a season when these storms follow one another almost without

interval throughout the winter months, and then the loss among the stock is frightful. One such winter occurred in 1880–81. This was when there were very few ranchmen in the country. The grass was so good that the old range stock escaped pretty well; but the trail herds were almost destroyed. The next severe winter was that of 1886–87, when the rush of incoming herds had overstocked the ranges, and the loss was in consequence fairly appalling, especially to the outfits that had just put on cattle.

The snowfall was unprecedented, both for its depth and for the way it lasted; and it was this, and not the cold, that caused the loss. About the middle of November the storms began. Day after day the snow came down, thawing and then freezing and piling itself higher and higher. By January the drifts had filled the ravines and coulées almost level. The snow lay in great masses on the plateaus and river-bottoms; and this lasted until the end of February. The preceding summer we had been visited by a prolonged drought, so that the short, scanty grass was already well cropped down; the snow covered what pasturage there was to the depth of several feet, and the cattle could not get at it at all, and could hardly move round. It was all but impossible to travel on horseback—except on a few well-beaten trails. It was dangerous to attempt to penetrate the Bad Lands, whose shape had been completely altered by the great white mounds and drifts. The starving cattle died by scores of thousands before their helpless owners' eyes. The bulls, the cows who were suckling calves or who were heavy with calf, the weak cattle that had just been driven up on the trail, and the late calves suffered most; the old range animals did better, and the steers best of all; but the

best was bad enough. Even many of the horses died. An outfit near me lost half its saddle band, the animals having been worked so hard that they were very thin when fall came.

In the thick brush the stock got some shelter and sustenance. They gnawed every twig and bough they could get at. They browsed the bitter sage-brush down to where the branches were the thickness of a man's finger. When near a ranch they crowded into the outhouses and sheds to die, and fences had to be built around the windows to keep the wild-eyed, desperate beasts from thrusting their heads through the glass panes. In most cases it was impossible either to drive them to the hay-stacks or to haul the hay out to them. The deer even were so weak as to be easily run down; and on one or two of the plateaus where there were bands of antelope, these wary creatures grew so numbed and feeble that they could have been slaughtered like rabbits. But the hunters could hardly get out, and could bring home neither hide nor meat, so the game went unharmed.

The way in which the cattle got through the winter depended largely on the different localities in which the bands were caught when the first heavy snows came. A group of animals in a bare valley, without underbrush and with steepish sides, would all die, weak and strong alike; they could get no food and no shelter, and so there would not be a hoof left. On the other hand, hundreds wintered on the great thickly wooded bottoms near my ranch-house with little more than ordinary loss, though a skinny, sorry-looking crew by the time the snow melted. In intermediate places the strong survived and the weak perished.

It would be impossible to imagine any sight more

dreary and melancholy than that offered by the ranges when the snow went off in March. The land was a mere barren waste; not a green thing could be seen; the dead grass eaten off till the country looked as if it had been shaved with a razor. Occasionally among the desolate hills a rider would come across a band of gaunt, hollow-flanked cattle feebly cropping the sparse, dry pasturage, too listless to move out of the way; and the blackened carcasses lay in the sheltered spots, some stretched out, others in as natural a position as if the animals had merely lain down to rest. It was small wonder that cheerful stockmen were rare objects that spring.

Our only comfort was that we did not, as usual, suffer a heavy loss from weak cattle getting mired down in the springs and mud-holes when the ice broke up—for all the weak animals were dead already. The truth is, ours is a primitive industry, and we suffer the reverses as well as enjoy the successes only known to primitive peoples. A hard winter is to us in the north what a dry summer is to Texas or Australia—what seasons of famine once were to all peoples. We still live in an iron age that the old civilized world has long passed by. The men of the border reckon upon stern and unending struggles with their iron-bound surroundings; against the grim harshness of their existence they set the strength and the abounding vitality that come with it. They run risks to life and limb that are unknown to the dwellers in cities; and what the men freely brave, the beasts that they own must also sometimes suffer.

VI

FRONTIER TYPES

The old race of Rocky Mountain hunters and trappers, of reckless, dauntless Indian fighters, is now fast dying out. Yet here and there these restless wanderers of the untrodden wilderness still linger, in wooded fastnesses so inaccessible that the miners have not yet explored them, in mountain valleys so far off that no ranchman has yet driven his herds thither. To this day many of them wear the fringed tunic or hunting-shirt, made of buckskin or homespun, and belted in at the waist—the most picturesque and distinctively national dress ever worn in America. It was the dress in which Daniel Boone was clad when he first passed through the trackless forests of the Alleghanies and penetrated into the heart of Kentucky, to enjoy such hunting as no man of his race had ever had before; it was the dress worn by grim old Davy Crockett when he fell at the Alamo. The wild soldiery of the backwoods wore it when they marched to victory over Ferguson and Pakenham, at King's Mountain and New Orleans; when they conquered the French towns of the Illinois; and when they won at the cost of Red Eagle's warriors the bloody triumph of the Horseshoe Bend.

These old-time hunters have been the forerunners of the white advance throughout all our Western land. Soon after the beginning of the present century they boldly struck out beyond the Mississippi, steered their way across the flat and endless seas of grass, or pushed up the valleys of the great lonely rivers, crossed the

passes that wound among the towering peaks of the Rockies, toiled over the melancholy wastes of sage-brush and alkali, and at last, breaking through the gloomy woodland that belts the coast, they looked out on the heaving waves of the greatest of all the oceans. They lived for months, often for years, among the Indians, now as friends, now as foes, warring, hunting, and marrying with them; they acted as guides for exploring parties, as scouts for the soldiers who from time to time were sent against the different hostile tribes. At long intervals they came into some frontier settlement or some fur company's fort, posted in the heart of the wilderness, to dispose of their bales of furs, or to replenish their stock of ammunition and purchase a scanty supply of coarse food and clothing.

From that day to this they have not changed their way of life. But there are not many of them left now. The basin of the upper Missouri was their last stronghold, being the last great hunting-ground of the Indians with whom the white trappers were always fighting and bickering, but who nevertheless by their presence protected the game that gave the trappers their livelihood. My cattle were among the very first to come into the land, at a time when the buffalo and beaver still abounded, and then the old hunters were common. Many a time I have hunted with them, spent the night in their smoky cabins, or had them as guests at my ranch. But in a couple of years after the inrush of the cattlemen the last herds of the buffalo were destroyed, and the beaver were trapped out of all the plains' streams. Then the hunters vanished likewise, save that here and there one or two still remain in some nook or out-of-the-way corner. The others wandered off restlessly over the land—some to join their brethren

in the Cœur d'Alêne or the northern Rockies, others to the coast ranges or to far-away Alaska. Moreover, their ranks were soon thinned by death, and the places of the dead were no longer taken by new recruits. They led hard lives, and the unending strain of their toilsome and dangerous existence shattered even such iron frames as theirs. They were killed in drunken brawls, or in nameless fights with roving Indians; they died by one of the thousand accidents incident to the business of their lives—by flood or quicksand, by cold or starvation, by the stumble of a horse or a foot-slip on the edge of a cliff; they perished by diseases brought on by terrible privation, and aggravated by the savage orgies with which it was varied.

Yet there was not only much that was attractive in their wild, free, reckless lives, but there was also very much good about the men themselves. They were—and such of them as are left still are—frank, bold, and self-reliant to a degree. They fear neither man, brute, nor element. They are generous and hospitable; they stand loyally by their friends, and pursue their enemies with bitter and vindictive hatred. For the rest, they differ among themselves in their good and bad points even more markedly than do men in civilized life, for out on the border virtue and wickedness alike take on very pronounced colors. A man who in civilization would be merely a backbiter becomes a murderer on the frontier; and, on the other hand, he who in the city would do nothing more than bid you a cheery good morning, shares his last bit of sun-jerked venison with you when threatened by starvation in the wilderness. One hunter may be a dark-browed, evil-eyed ruffian, ready to kill cattle or run off horses without hesitation, who if game fails will at once, in Western phrase, "take

to the road"—that is, become a highwayman. The next is perhaps a quiet, kindly, simple-hearted man, law-abiding, modestly unconscious of the worth of his own fearless courage and iron endurance, always faithful to his friends, and full of chivalric and tender loyalty to women.

The hunter is the archetype of freedom. His well-being rests in no man's hands save his own. He chops down and hews out the logs for his hut, or perhaps makes merely a rude dugout in the side of a hill, with a skin roof, and skin flaps for the door. He buys a little flour and salt, and in times of plenty also sugar and tea; but not much, for it must all be carried hundreds of miles on the backs of his shaggy pack-ponies. In one corner of the hut, a bunk covered with deerskins forms his bed; a kettle and a frying-pan may be all his cooking utensils. When he can get no fresh meat he falls back on his stock of jerked venison, dried in long strips over the fire or in the sun.

Most of the trappers are Americans, but they also include some Frenchmen and half-breeds. Both of the last, if on the plains, occasionally make use of queer wooden carts, very rude in shape, with stout wheels that make a most doleful squeaking. In old times they all had Indian wives; but nowadays those who live among and intermarry with the Indians are looked down upon by the other frontiersmen, who contemptuously term them "squaw-men." All of them depend upon their rifles only for food and for self-defense, and make their living by trapping, peltries being very valuable and yet not bulky. They are good game-shots, especially the pure Americans; although, of course, they are very boastful, and generally stretch the truth tremendously in telling about their own marksman-

ship. Still they often do very remarkable shooting, both for speed and accuracy. One of their feats that I never could learn to copy is to make excellent shooting after nightfall. Of course all this applies only to the regular hunters; not to the numerous pretenders who hang around the outskirts of the towns to try to persuade unwary strangers to take them for guides.

On one of my trips to the mountains I happened to come across several old-style hunters at the same time. Two were on their way out of the woods, after having been all winter and spring without seeing a white face. They had been lucky, and their battered pack-saddles carried bales of valuable furs—fisher, sable, otter, mink, beaver. The two men, though fast friends and allies for many years, contrasted oddly. One was a short, square-built, good-humored Kanuck, always laughing and talking, who interlarded his conversation with a singularly original mixture of the most villainous French and English profanity. His partner was an American, gray-eyed, tall and straight as a young pine, with a saturnine, rather haughty face, and proud bearing. He spoke very little, and then in low tones, never using an oath; but he showed now and then a most unexpected sense of dry humor. Both were images of bronzed and rugged strength. Neither had the slightest touch of the bully in his nature; they treated others with the respect that they also exacted for themselves. They bore an excellent reputation as being not only highly skilled in woodcraft and the use of the rifle, but also men of tried courage and strict integrity whose word could be always implicitly trusted.

I had with me at the time a hunter who, though their equal as marksman or woodsman, was their exact op-

posite morally. He was a pleasant companion and useful assistant, being very hard-working and possessing a temper that never was ruffled by anything. He was also a good-looking fellow, with honest brown eyes; but he no more knew the difference between right and wrong than Adam did before the fall. Had he been at all conscious of his wickedness, or had he possessed the least sense of shame, he would have been unbearable as a companion; but he was so perfectly pleasant and easy, so good-humoredly tolerant of virtue in others, and he so wholly lacked even a glimmering suspicion that murder, theft, and adultery were matters of anything more than individual taste, that I actually grew to be rather fond of him. He never related any of his past deeds of wickedness as matters either for boastfulness or for regret; they were simply repeated incidentally in the course of conversation. Thus, once in speaking of the profits of his different enterprises, he casually mentioned making a good deal of money as a government scout in the Southwest by buying cartridges from some negro troops at a cent apiece and selling them to the hostile Apaches for a dollar each. His conduct was not due to sympathy with the Indians, for it appeared that later on he had taken part in massacring some of these same Apaches when they were prisoners. He brushed aside as irrelevant one or two questions which I put to him: matters of sentiment were not to be mixed up with a purely mercantile speculation. Another time we were talking of the curious angles bullets sometimes fly off at when they ricochet. To illustrate the matter he related an experience which I shall try to give in his own words. "One time, when I was keeping a saloon down in New Mexico, there was a man owed me a grudge. Well, he took sick of the

smallpox, and the doctor told him he'd sure die, and he said if that was so he reckoned he'd kill me first. So he come a-riding in with his gun [in the West a revolver is generally called a gun] and begun shooting; but I hit him first, and away he rode. I started to get on my horse to follow him; but there was a little Irishman there who said he'd never killed a man, and he begged hard for me to give him my gun and let him go after the other man and finish him. So I let him go; and when he caught up, blamed if the little cuss didn't get so nervous that he fired off into the ground, and the darned bullet struck a crowbar, and glanced up, and hit the other man square in the head and killed him! Now, that *was* a funny shot, wasn't it?"

The fourth member of our party round the campfire that night was a powerfully built trapper, partly French by blood, who wore a gaily colored capote, or blanket-coat, a greasy fur cap, and moccasins. He had grizzled hair, and a certain uneasy, half-furtive look about the eyes. Once or twice he showed a curious reluctance about allowing a man to approach him suddenly from behind. Altogether his actions were so odd that I felt some curiosity to learn his history. It turned out that he had been through a rather uncanny experience the winter before. He and another man had gone into a remote basin, or enclosed valley, in the heart of the mountains, where game was very plentiful; indeed, it was so abundant that they decided to pass the winter there. Accordingly they put up a log cabin, working hard, and merely killing enough meat for their immediate use. Just as it was finished winter set in with tremendous snow-storms. Going out to hunt, in the first lull, they found, to their consternation, that every head of game had left the valley. Not

an animal was to be found therein; they had abandoned it for their winter haunts. The outlook for the two adventurers was appalling. They were afraid of trying to break out through the deep snow-drifts, and starvation stared them in the face if they stayed. The man I met had his dog with him. They put themselves on very short commons, so as to use up their flour as slowly as possible, and hunted unweariedly, but saw nothing. Soon a violent quarrel broke out between them. The other man, a fierce, sullen fellow, insisted that the dog should be killed, but the owner was exceedingly attached to it and refused. For a couple of weeks they spoke no word to each other, though cooped in the little narrow pen of logs. Then one night the owner of the dog was wakened by the animal crying out; the other man had tried to kill it with his knife, but failed. The provisions were now almost exhausted, and the two men were glaring at each other with the rage of maddened, ravening hunger. Neither dared to sleep, for fear that the other would kill him. Then the one who owned the dog at last spoke, and proposed that, to give each a chance for his life, they should separate. He would take half of the handful of flour that was left and start off to try to get home; the other should stay where he was; and if he tried to follow the first, he was warned that he would be shot without mercy. A like fate was to be the portion of the wanderer if driven to return to the hut. The arrangement was agreed to and the two men separated, neither daring to turn his back while they were within rifle-shot of each other. For two days the one who went off toiled on with weary weakness through the snow-drifts. Late on the second afternoon, as he looked back from a high ridge, he saw in the far distance a black speck against

the snow, coming along on his trail. His companion was dogging his footsteps. Immediately he followed his own trail back a little and lay in ambush. At dusk his companion came stealthily up, rifle in hand, peering cautiously ahead, his drawn face showing the starved, eager ferocity of a wild beast, and the man he was hunting shot him down exactly as if he had been one. Leaving the body where it fell, the wanderer continued his journey, the dog staggering painfully behind him. The next evening he baked his last cake and divided it with the dog. In the morning, with his belt drawn still tighter round his skeleton body, he once more set out, with apparently only a few hours of dull misery between him and death. At noon he crossed the track of a huge timber-wolf; instantly the dog gave tongue, and, rallying its strength, ran along the trail. The man struggled after. At last his strength gave out and he sat down to die; but while sitting still, slowly stiffening with the cold, he heard the dog baying in the woods. Shaking off his mortal numbness, he crawled toward the sound, and found the wolf over the body of a deer that he had just killed, and keeping the dog from it. At the approach of the new assailant the wolf sullenly drew off, and man and dog tore the raw deer-flesh with hideous eagerness. It made them very sick for the next twenty-four hours; but, lying by the carcass for two or three days, they recovered strength. A week afterward the trapper reached a miner's cabin in safety. There he told his tale, and the unknown man who alone might possibly have contradicted it lay dead in the depths of the wolf-haunted forest.

The cowboys, who have supplanted these old hunters and trappers as the typical men of the plains, themselves lead lives that are almost as full of hardship and ad-

venture. The unbearable cold of winter sometimes makes the small outlying camps fairly uninhabitable if fuel runs short; and if the line-riders are caught in a blizzard while making their way to the home-ranch, they are lucky if they get off with nothing worse than frozen feet and faces.

They are, in the main, hard-working, faithful fellows, but of course are frequently obliged to get into scrapes through no fault of their own. Once, while out on a wagon trip, I got caught while camped by a spring on the prairie, through my horses all straying. A few miles off was the camp of two cowboys, who were riding the line for a great Southern cow outfit. I did not even know their names, but happening to pass by them I told of my loss, and the day after they turned up with the missing horses, which they had been hunting for twenty-four hours. All I could do in return was to give them some reading matter—something for which the men in these lonely camps are always grateful. Afterward I spent a day or two with my new friends, and we became quite intimate. They were Texans. Both were quiet, clean-cut, pleasant-spoken young fellows, who did not even swear except under great provocation—and there can be no greater provocation than is given by a "mean" horse or a refractory steer. Yet, to my surprise, I found that they were, in a certain sense, fugitives from justice. They were complaining of the extreme severity of the winter weather, and mentioned their longing to go back to the South. The reason they could not was that the summer before they had taken part in a small civil war in one of the wilder counties of New Mexico. It had originated in a quarrel between two great ranches over their respective water rights and range rights—a quarrel of a kind rife among

pastoral peoples since the days when the herdsmen of Lot and Abraham strove together for the grazing-lands round the mouth of the Jordan. There were collisions between bands of armed cowboys, the cattle were harried from the springs, outlying camps were burned down, and the sons of the rival owners fought each other to the death with bowie-knife and revolver when they met at the drinking-booths of the squalid towns. Soon the smouldering jealousy which is ever existent between the Americans and Mexicans of the frontier was aroused, and when the original cause of quarrel was adjusted, a fierce race struggle took its place. It was soon quelled by the arrival of a strong sheriff's posse and the threat of interference by the regular troops, but not until after a couple of affrays, each attended with bloodshed. In one of these the American cowboys of a certain range, after a brisk fight, drove out the Mexican *vaqueros* from among them. In the other, to avenge the murder of one of their number, the cowboys gathered from the country round about and fairly stormed the "Greaser" (that is, Mexican) village where the murder had been committed, killing four of the inhabitants. My two friends had borne a part in this last affair. They were careful to give a rather cloudy account of the details, but I gathered that one of them was "wanted" as a participant, and the other as a witness.

However, they were both good fellows, and probably their conduct was justifiable, at least according to the rather fitful lights of the border. Sitting up late with them, around the sputtering fire, they became quite confidential. At first our conversation touched only the usual monotonous round of subjects worn threadbare in every cow camp. A bunch of steers had been

seen travelling over the scoria buttes to the head of Elk Creek; they were mostly Texan *doughgies* (a name I have never seen written; it applies to young immigrant cattle), but there were some of the Hash-Knife four-year-olds among them. A stray horse with a blurred brand on the left hip had just joined the bunch of saddle-ponies. The red F. V. cow, one of whose legs had been badly bitten by a wolf, had got mired down in an alkali spring, and when hauled out had charged upon her rescuer so viciously that he barely escaped. The old mule, Sawback, was getting over the effects of the rattlesnake bite. The river was going down, but the fords were still bad, and the quicksand at the Custer Trail crossing had worked along so that wagons had to be taken over opposite the blasted cottonwood. One of the men had seen a Three-Seven-B rider who had just left the Green River round-up, and who brought news that they had found some cattle on the reservation, and were now holding about twelve hundred head on the big brushy bottom below Rainy Butte. Bronco Jim, our local flash rider, had tried to ride the big, bald-faced sorrel belonging to the Oregon horse outfit, and had been bucked off and his face smashed in. This piece of information of course drew forth much condemnation of the unfortunate Jim's equestrian skill. It was at once agreed that he "wasn't the sure-enough bronco-buster he thought himself," and he was compared very unfavorably to various heroes of the quirt and spurs who lived in Texas and Colorado; for the best rider, like the best hunter, is invariably either dead or else a resident of some other district.

These topics having been exhausted, we discussed the rumor that the vigilantes had given notice to quit to two men who had just built a shack at the head of the

Little Dry, and whose horses included a suspiciously large number of different brands, most of them blurred. Then our conversation became more personal, and they asked if I would take some letters to post for them. Of course I said yes, and two letters—evidently the product of severe manual labor—were produced. Each was directed to a girl; and my companions, now very friendly, told me that they both had sweethearts, and for the next hour I listened to a full account of their charms and virtues.

But it is not often that plainsmen talk so freely. They are rather reserved, especially to strangers; and are certain to look with dislike on any man who, when they first meet him, talks a great deal. It is always a good plan, if visiting a strange camp or ranch, to be as silent as possible.

Another time, at a ranch not far from my own, I found among the cowboys gathered for the round-up two Bible-reading Methodists. They were as strait-laced as any of their kind, but did not obtrude their opinions on any one else, and were first-class workers, so that they had no trouble with the other men. Associated with them were two or three blear-eyed, slit-mouthed ruffians, who were as loose of tongue as of life.

Generally some form of stable government is provided for the counties as soon as their population has become at all fixed, the frontiersmen showing their national aptitude for organization. Then lawlessness is put down pretty effectively. For example, as soon as we organized the government of Medora—an excessively unattractive little hamlet, the county-seat of our huge, scantily settled county—we elected some good officers, built a log jail, prohibited all shooting in the streets, and enforced the prohibition, etc., etc.

Up to that time there had been a good deal of lawlessness of one kind or another, only checked by an occasional piece of individual retribution or by a sporadic outburst of vigilance committee work. In such a society the desperadoes of every grade flourish. Many are merely ordinary rogues and swindlers, who rob and cheat on occasion, but are dangerous only when led by some villain of real intellectual power. The gambler, with hawk eyes and lissome fingers, is scarcely classed as a criminal; indeed, he may be a very public-spirited citizen. But as his trade is so often plied in saloons, and as even if, as sometimes happens, he does not cheat, many of his opponents are certain to attempt to do so, he is of necessity obliged to be skilful and ready with his weapon, and gambling rows are very common. Cowboys lose much of their money to gamblers; it is with them hard come and light go, for they exchange the wages of six months' grinding toil and lonely peril for three days' whooping carousal, spending their money on poisonous whiskey or losing it over greasy cards in the vile dance-houses. As already explained, they are in the main good men; and the disturbance they cause in a town is done from sheer rough light-heartedness. They shoot off boot-heels or tall hats occasionally, or make some obnoxious butt "dance" by shooting round his feet; but they rarely meddle in this way with men who have not themselves played the fool. A fight in the streets is almost always a duel between two men who bear each other malice; it is only in a general mêlée in a saloon that outsiders often get hurt, and then it is their own fault, for they have no business to be there. One evening at Medora a cowboy spurred his horse up the steps of a rickety "hotel" piazza into the barroom, where he

began firing at the clock, the decanters, etc., the bartender meanwhile taking one shot at him, which missed. When he had emptied his revolver he threw down a roll of bank-notes on the counter, to pay for the damage he had done, and galloped his horse out through the door, disappearing in the darkness with loud yells to a rattling accompaniment of pistol-shots interchanged between himself and some passer-by who apparently began firing out of pure desire to enter into the spirit of the occasion—for it was the night of the Fourth of July, and all the country round about had come into town for a spree.

All this is mere horse-play; it is the cowboy's method of "painting the town red," as an interlude in his harsh, monotonous life. Of course there are plenty of hard characters among cowboys, but no more than among lumbermen and the like; only the cowboys are so ready with their weapons that a bully in one of their camps is apt to be a murderer instead of merely a bruiser. Often, moreover, on a long trail, or in a far-off camp, where the men are for many months alone, feuds spring up that are in the end sure to be slaked in blood. As a rule, however, cowboys who become desperadoes soon perforce drop their original business, and are no longer employed on ranches, unless in counties or territories where there is very little heed paid to the law, and where, in consequence, a cattle-owner needs a certain number of hired bravos. Until within two or three years this was the case in parts of Arizona and New Mexico, where land claims were "jumped" and cattle stolen all the while, one effect being to insure high wages to every individual who combined murderous proclivities with skill in the use of the six-shooter.

Even in much more quiet regions different outfits

vary greatly as regards the character of their employees: I know one or two where the men are good ropers and riders, but a gambling, brawling, hard-drinking set, always shooting each other or strangers. Generally, in such a case, the boss is himself as objectionable as his men; he is one of those who have risen by unblushing rascality, and is always sharply watched by his neighbors, because he is sure to try to shift calves on to his own cows, to brand any blurred animal with his own mark, and perhaps to attempt the alteration of perfectly plain brands. The last operation, however, has become very risky since the organization of the cattle country and the appointment of trained brand-readers as inspectors. These inspectors examine the hide of every animal slain, sold, or driven off, and it is wonderful to see how quickly one of them will detect any signs of a brand having been tampered with. Now there is, in consequence, very little of this kind of dishonesty; whereas formerly herds were occasionally stolen almost bodily.

Claim-jumpers are, as a rule, merely blackmailers. Sometimes they will by threats drive an ignorant foreigner from his claim, but never an old frontiersman. They delight to squat down beside ranchmen who are themselves trying to keep land to which they are not entitled, and who therefore know that their only hope is to bribe or to bully the intruder.

Cattle-thieves, for the reason given above, are not common, although there are plenty of vicious, shiftless men who will kill a cow or a steer for the meat in winter, if they get a chance.

Horse-thieves, however, are always numerous and formidable on the frontier; though in our own country they have been summarily thinned out of late years.

It is the fashion to laugh at the severity with which horse-stealing is punished on the border, but the reasons are evident. Horses are the most valuable property of the frontiersman, whether cowboy, hunter, or settler, and are often absolutely essential to his well-being and even to his life. They are always marketable, and they are very easily stolen, for they carry themselves off instead of having to be carried. Horse-stealing is thus a most tempting business, especially to the more reckless ruffians, and it is always followed by armed men; and they can only be kept in check by ruthless severity. Frequently they band together with the road-agents (highwaymen) and other desperadoes into secret organizations, which control and terrorize a district until overthrown by force. After the Civil War a great many guerillas, notably from Arkansas and Missouri, went out to the plains, often drifting northward. They took naturally to horse-stealing and kindred pursuits. Since I have been in the northern cattle country I have known of half a dozen former members of Quantrell's gang being hung or shot.

The professional man-killers, or "bad men," may be horse-thieves or highwaymen, but more often are neither one nor the other. Some of them, like some of the Texan cowboys, become very expert in the use of the revolver, their invariable standby; but in the open a cool man with a rifle is always an overmatch for one of them, unless at very close quarters, on account of the superiority of his weapon. Some of the "bad men" are quiet, good fellows who have been driven into their career by accident. One of them has perhaps at some time killed a man in self-defense; he acquires some reputation, and the neighboring bullies get to look on him as a rival whom it would be an honor to slay; so that from

that time on he must be ever on the watch, must learn to draw quick and shoot straight—the former being even more important than the latter—and probably has to take life after life in order to save his own.

Some of these men are brave only because of their confidence in their own skill and strength; once convince them that they are overmatched and they turn into abject cowards. Others have nerves of steel and will face any odds or certain death itself, without flinching a hand's breadth. I was once staying in a town where a desperately plucky fight took place. A noted desperado, an Arkansas man, had become involved in a quarrel with two others of the same ilk, both Irishmen and partners. For several days all three lurked about the saloon-infested streets of the roaring little board-and-canvas "city," each trying to get "the drop"—that is, the first shot—the other inhabitants looking forward to the fight with pleased curiosity, no one dreaming of interfering. At last one of the partners got a chance at his opponent as the latter was walking into a gambling-hell, and broke his back near the hips; yet the crippled, mortally wounded man twisted around as he fell and shot his slayer dead. Then, knowing that he had but a few moments to live, and expecting that his other foe would run up on hearing the shooting, he dragged himself by his arms out into the street; immediately afterward, as he anticipated, the second partner appeared, and was killed on the spot. The victor did not live twenty minutes. As in most of these encounters, all of the men who were killed deserved their fate. In my own not very extensive experience I can recall but one man killed in these fights whose death was regretted, and he was slain by a European. Generally every one is heartily glad to

hear of the death of either of the contestants, and the only regret is that the other survives.

One curious shooting scrape that took place in Medora was worthy of being chronicled by Bret Harte. It occurred in the summer of 1884, I believe, but it may have been the year following. I did not see the actual occurrence, but I saw both men immediately afterward; and I heard the shooting, which took place in a saloon on the bank, while I was swimming my horse across the river, holding my rifle up so as not to wet it. I will not give their full names, as I am not certain what has become of them; though I was told that one had since been either put in jail or hung, I forget which. One of them was a saloon-keeper, familiarly called Welshy. The other man, Hay, had been bickering with him for some time. One day Hay, who had been defeated in a wrestling-match by one of my own boys, and was out of temper, entered the other's saloon, and became very abusive. The quarrel grew more and more violent, and suddenly Welshy whipped out his revolver and blazed away at Hay. The latter staggered slightly, shook himself, stretched out his hand, and *gave back to his would-be slayer the ball*, saying: "Here, man, here's the bullet." It had glanced along his breast-bone, gone into the body, and come out at the point of the shoulder, when, being spent, it dropped down the sleeve into his hand. Next day the local paper, which rejoiced in the title of *The Bad Lands Cowboy*, chronicled the event in the usual vague way as an "unfortunate occurrence" between "two of our most esteemed fellow-citizens." The editor was a good fellow, a college graduate, and a first-class base-ball-player, who always stood stoutly up against any corrupt dealing; but, like all other editors in small

Western towns, he was intimate with both combatants in almost every fight.

The winter after this occurrence I was away, and on my return began asking my foreman—a particular crony of mine—about the fates of my various friends. Among others I inquired after a travelling preacher who had come to our neighborhood; a good man, but irascible. After a moment's pause a gleam of remembrance came into my informant's eye: "Oh, the parson! Well —he beat a man over the head with an axe, and they put him in jail!" It certainly seemed a rather summary method of repressing a refractory parishioner. Another acquaintance had shared a like doom. "He started to go out of the country, but they ketched him at Bismarck and put him in jail"—apparently on general principles, for I did not hear of his having committed any specific crime. My foreman sometimes developed his own theories of propriety. I remember his objecting strenuously to a proposal to lynch a certain French-Canadian who had lived in his own cabin, back from the river, ever since the whites came into the land, but who was suspected of being a horse-thief. His chief point against the proposal was, not that the man was innocent, but that "it didn't seem anyways right to hang a man who had been so long in the country."

Sometimes we had a comic row. There was one huge man from Missouri, called "The Pike," who had been the keeper of a wood-yard for steamboats on the upper Missouri. Like most of his class, he was a hard case, and, though pleasant enough when sober, always insisted on fighting when drunk. One day, when on a spree, he announced his intention of thrashing the entire population of Medora seriatim, and began to

make his promise good with great vigor and praiseworthy impartiality. He was victorious over the first two or three eminent citizens whom he encountered, and then tackled a gentleman known as "Cold Turkey Bill." Under ordinary circumstances Cold Turkey, though an able-bodied man, was no match for The Pike; but the latter was still rather drunk, and moreover was wearied by his previous combats. So Cold Turkey got him down, lay on him, choked him by the throat with one hand, and began pounding his face with a triangular rock held in the other. To the onlookers the fate of the battle seemed decided; but Cold Turkey better appreciated the endurance of his adversary, and it soon appeared that he sympathized with the traditional hunter who, having caught a wildcat, earnestly besought a comrade to help him let it go. While still pounding vigorously he raised an agonized wail: "Help me off, fellows, for the Lord's sake; he's tiring me out!" There was no resisting so plaintive an appeal, and the bystanders at once abandoned their attitude of neutrality for one of armed intervention.

I have always been treated with the utmost courtesy by all cowboys, whether on the round-up or in camp; and the few real desperadoes I have seen were also perfectly polite. Indeed, I never was shot at maliciously but once. This was on an occasion when I had to pass the night in a little frontier hotel where the barroom occupied the whole lower floor, and was in consequence the place where every one, drunk or sober, had to sit. My assailant was neither a cowboy nor a bona-fide "bad man," but a broad-hatted ruffian of cheap and commonplace type, who had for the moment terrorized the other men in the barroom, these being mostly sheep-herders and small grangers. The fact

that I wore glasses, together with my evident desire to avoid a fight, apparently gave him the impression—a mistaken one—that I would not resent an injury.

The first deadly affray that took place in our town, after the cattlemen came in and regular settlement began, was between a Scotchman and a Minnesota man, the latter being one of the small stockmen. Both had "shooting" records, and each was a man with a varied past. The Scotchman, a noted bully, was the more daring of the two, but he was much too hot-headed and overbearing to be a match for his gray-eyed, hard-featured foe. After a furious quarrel and threats of violence, the Scotchman mounted his horse, and, rifle in hand, rode to the door of the mud ranch, perched on the brink of the river bluff, where the American lived, and was instantly shot down by the latter from behind a corner of the building.

Later on I once opened a cowboy ball with the wife of the victor in this contest, the husband himself dancing opposite. It was the lanciers, and he knew all the steps far better than I did. He could have danced a minuet very well with a little practice. The scene reminded one of the ball where Bret Harte's heroine "danced down the middle with the man who shot Sandy Magee."

But though there were plenty of men present each of whom had shot his luckless Sandy Magee, yet there was no Lily of Poverty Flat. There is an old and true border saying that "the frontier is hard on women and cattle." There are some striking exceptions; but, as a rule, the grinding toil and hardship of a life passed in the wilderness, or on its outskirts, drive the beauty and bloom from a woman's face long before her youth has left her. By the time she is a mother she is sinewy

and angular, with thin, compressed lips and furrowed, sallow brow. But she has a hundred qualities that atone for the grace she lacks. She is a good mother and a hard-working housewife, always putting things to rights, washing and cooking for her stalwart spouse and offspring. She is faithful to her husband, and, like the true American that she is, exacts faithfulness in return. Peril cannot daunt her, nor hardship and poverty appall her. Whether on the mountains in a log hut chinked with moss, in a sod or adobe hovel on the desolate prairie, or in a mere temporary camp, where the white-topped wagons have been drawn up in a protection-giving circle near some spring, she is equally at home. Clad in a dingy gown and a hideous sunbonnet she goes bravely about her work, resolute, silent, uncomplaining. The children grow up pretty much as fate dictates. Even when very small they seem well able to protect themselves. The wife of one of my teamsters, who lived in a small outlying camp, used to keep the youngest and most troublesome members of her family out of mischief by the simple expedient of picketing them out, each child being tied by the leg, with a long leather string, to a stake driven into the ground, so that it could neither get at another child nor at anything breakable.

The best buckskin-maker I ever met was, if not a typical frontierswoman, at least a woman who could not have reached her full development save on the border. She made first-class hunting-shirts, leggings, and gantlets. When I knew her she was living alone in her cabin on mid-prairie, having dismissed her husband six months previously in an exceedingly summary manner. She not only possessed redoubtable qualities of head and hand, but also a nice sense of justice, even

toward Indians, that is not always found on the frontier. Once, going there for a buckskin shirt, I met at her cabin three Sioux, and from their leader, named One Bull, purchased a tobacco-pouch, beautifully worked with porcupine quills. She had given them some dinner, for which they had paid with a deer-hide. Falling into conversation, she mentioned that just before I came up a white man, apparently from Deadwood, had passed by, and had tried to steal the Indians' horses. The latter had been too quick for him, had run him down, and brought him back to the cabin. "I told 'em to go right on and hang him, and *I* wouldn't never cheep about it," said my informant; "but they let him go, after taking his gun. There ain't no sense in stealing from Indians any more than from white folks, and I'm not going to have it round my ranch, neither. There! I'll give 'em back the deer-hide they give me for the dinner and things, anyway." I told her I sincerely wished we could make her sheriff and Indian agent. She made the Indians—and whites, too, for that matter—behave themselves and walk the straightest kind of line, not tolerating the least symptom of rebellion; but she had a strong natural sense of justice.

The cowboy balls, spoken of above, are always great events in the small towns where they take place, being usually given when the round-up passes near; everybody round about comes in for them. They are almost always conducted with great decorum; no unseemly conduct would be tolerated. There is usually some master of the ceremonies, chosen with due regard to brawn as well as brain. He calls off the figures of the square dances, so that even the inexperienced may get through them, and incidentally preserves order. Some-

times we are allowed to wear our revolvers, and sometimes not. The nature of the band, of course, depends upon the size of the place. I remember one ball that came near being a failure because our half-breed fiddler "went and got himself shot," as the indignant master of the ceremonies phrased it.

But all these things are merely incidents in the cowboy's life. It is utterly unfair to judge the whole class by what a few individuals do in the course of two or three days spent in town, instead of by the long months of weary, honest toil common to all alike. To appreciate properly his fine, manly qualities, the wild rough-rider of the plains should be seen in his own home. There he passes his days, there he does his life-work, there, when he meets death, he faces it as he has faced many other evils, with quiet, uncomplaining fortitude. Brave, hospitable, hardy, and adventurous, he is the grim pioneer of our race; he prepares the way for the civilization from before whose face he must himself disappear. Hard and dangerous though his existence is, it has yet a wild attraction that strongly draws to it his bold, free spirit. He lives in the lonely lands where mighty rivers twist in long reaches between the barren bluffs; where the prairies stretch out into billowy plains of waving grass, girt only by the blue horizon—plains across whose endless breadth he can steer his course for days and weeks and see neither man to speak to nor hill to break the level; where the glory and the burning splendor of the sunsets kindle the blue vault of heaven and the level brown earth till they merge together in an ocean of flaming fire.

VII

RED AND WHITE ON THE BORDER

Up to 1880 the country through which the Little Missouri flows remained as wild and almost as unknown as it was when the old explorers and fur traders crossed it in the early part of the century. It was the last great Indian hunting-ground, across which Grosventres and Mandans, Sioux and Cheyennes, and even Crows and Rees wandered in chase of game, and where they fought one another and plundered the small parties of white trappers and hunters that occasionally ventured into it. Once or twice generals like Sully and Custer had penetrated it in the course of the long, tedious, and bloody campaigns that finally broke the strength of the northern Horse Indians; indeed, the trail made by Custer's baggage-train is to this day one of the well-known landmarks, for the deep ruts worn by the wheels of the heavy wagons are in many places still as distinctly to be seen as ever.

In 1883, a regular long-range skirmish took place just south of us between some Cheyennes and some cowboys, with bloodshed on both sides, while about the same time a band of Sioux plundered a party of buffalo-hunters of everything they owned, and some Crows who attempted the same feat with another party were driven off with the loss of two of their number. Since then there have been in our neighborhood no stand-up fights or regular raids; but the Indians have at different times proved more or less troublesome, burning the grass and occasionally killing stock or carrying

off horses that have wandered some distance away. They have also themselves suffered somewhat at the hands of white horse-thieves.

Bands of them, accompanied by their squaws and children, often come into the ranch country, either to trade or to hunt, and are then, of course, perfectly meek and peaceable. If they stay any time they build themselves quite comfortable teepees (wigwams, as they would be styled in the East), and an Indian camp is a rather interesting, though very dirty, place to visit. On our ranch we get along particularly well with them, as it is a rule that they shall be treated as fairly as if they were whites: we neither wrong them ourselves nor allow others to wrong them. We have always, for example, been as keen in putting down horse-stealing from Indians as from whites—which indicates rather an advanced stage of frontier morality, as theft from the "redskins" or the "government" is usually held to be a very trivial matter compared with the heinous crime of theft from "citizens."

There is always danger in meeting a band of young bucks in lonely, uninhabited country—those that have barely reached manhood being the most truculent, insolent, and reckless. A man meeting such a party runs great risk of losing his horse, his rifle, and all else he has. This has happened quite frequently during the past few years to hunters or cowboys who have wandered into the debatable territory where our country borders on the Indian lands; and in at least one such instance, that took place three years ago, the unfortunate individual lost his life as well as his belongings. But a frontiersman of any experience can generally "stand off" a small number of such assailants, unless he loses his nerve or is taken by surprise.

My only adventure with Indians was of a very mild kind. It was in the course of a solitary trip to the north and east of our range, to what was then practically unknown country, although now containing many herds of cattle. One morning I had been travelling along the edge of the prairie, and about noon I rode Manitou up a slight rise and came out on a plateau that was perhaps half a mile broad. When near the middle, four or five Indians suddenly came up over the edge, directly in front of me. The second they saw me they whipped their guns out of their slings, started their horses into a run, and came on at full tilt, whooping and brandishing their weapons. I instantly reined up and dismounted. The level plain where we were was of all places the one on which such an onslaught could best be met. In any broken country, or where there is much cover, a white man is at a great disadvantage if pitted against such adepts in the art of hiding as Indians; while, on the other hand, the latter will rarely rush in on a foe who, even if overpowered in the end, will probably inflict severe loss on his assailants. The fury of an Indian charge, and the whoops by which it is accompanied, often scare horses so as to stampede them; but in Manitou I had perfect trust, and the old fellow stood as steady as a rock, merely cocking his ears and looking round at the noise. I waited until the Indians were a hundred yards off, and then threw up my rifle and drew a bead on the foremost. The effect was like magic. The whole party scattered out as wild pigeons or teal-ducks sometimes do when shot at, and doubled back on their tracks, the men bending over alongside their horses. When some distance off they halted and gathered together to consult, and after a minute one came forward alone, ostentatiously drop-

ping his rifle and waving a blanket over his head. When he came to within fifty yards I stopped him, and he pulled out a piece of paper—all Indians, when absent from their reservations, are supposed to carry passes—and called out: "How! Me good Indian!" I answered, "How," and assured him most sincerely I was very glad he *was* a good Indian, but I would not let him come closer; and when his companions began to draw near, I covered him with the rifle and made him move off, which he did with a sudden lapse into the most canonical Anglo-Saxon profanity. I then started to lead my horse out to the prairie; and after hovering round a short time they rode off, while I followed suit, but in the opposite direction. It had all passed too quickly for me to have time to get frightened; but during the rest of my ride I was exceedingly uneasy, and pushed tough, speedy old Manitou along at a rapid rate, keeping well out on the level. However, I never saw the Indians again. They may not have intended any mischief beyond giving me a fright; but I did not dare to let them come to close quarters, for they would have probably taken my horse and rifle, and not impossibly my scalp as well. Toward nightfall I fell in with two old trappers who lived near Killdeer Mountains, and they informed me that my assailants were some young Sioux bucks, at whose hands they themselves had just suffered the loss of two horses.

A few cool, resolute whites, well armed, can generally beat back a much larger number of Indians if attacked in the open. One of the first cattle outfits that came to the Powder River country, at the very end of the last war with the Sioux and Cheyennes, had an experience of this sort. There were six or eight whites, including the foreman who was part owner, and

they had about a thousand head of cattle. These they intended to hold just out of the dangerous district until the end of the war, which was evidently close at hand. They would thus get first choice of the new grazing-grounds. But they ventured a little too far, and one day while on the trail were suddenly charged by fifty or sixty Indians. The cattle were scattered in every direction, and many of them slain in wantonness, though most were subsequently recovered. All the loose horses were driven off. But the men themselves instantly ran together and formed a ring, fighting from behind the pack and saddle ponies. One of their number was killed, as well as two or three of the animals composing their living breastwork; but, being good riflemen, they drove off their foes. The latter did not charge them directly, but circled round, each rider concealed on the outside of his horse; and though their firing was very rapid, it was, naturally, very wild. The whites killed a good many ponies, and got one scalp, belonging to a young Sioux brave who dashed up too close, and whose body in consequence could not be carried off by his comrades, as happened to the two or three others who were seen to fall. Both the men who related the incident to me had been especially struck by the skill and daring shown by the Indians in thus carrying off their dead and wounded the instant they fell.

The relations between the white borderers and their red-skinned foes and neighbors are rarely pleasant. There are incessant quarrels, and each side has to complain of bitter wrongs. Many of the frontiersmen are brutal, reckless, and overbearing; most of the Indians are treacherous, revengeful, and fiendishly cruel. Crime and bloodshed are the only possible results when such men are brought in contact. Writers usually pay heed

only to one side of the story; they recite the crimes committed by one party, whether whites or Indians, and omit all reference to the equally numerous sins of the other. In our dealings with the Indians we have erred quite as often through sentimentality as through wilful wrong-doing. Out of my own short experience I could recite a dozen instances of white outrages which, if told alone, would seem to justify all the outcry raised on behalf of the Indian; and I could also tell of as many Indian atrocities which make one almost feel that not a single one of the race should be left alive.

The chief trouble arises from the feeling alluded to in this last sentence—the tendency on each side to hold the race, and not the individual, responsible for the deeds of the latter. The skirmish between the cowboys and the Cheyennes, spoken of above, offers a case in point. It was afterward found out that two horse-thieves had stolen some ponies from the Cheyennes. The latter at once sallied out and attempted to take some from a cow camp, and a fight resulted. In exactly the same way I once knew a party of buffalo-hunters, who had been robbed of their horses by the Sioux, to retaliate by stealing an equal number from some perfectly peaceful Grosventres. A white or an Indian who would not himself commit any outrage will yet make no effort to prevent his fellows from organizing expeditions against men of the rival race. This is natural enough where law is weak, and where, in consequence, every man has as much as he can do to protect himself without meddling in the quarrels of his neighbors. Thus a white community will often refrain from taking active steps against men who steal horses only from the Indians, although I have known a number of instances where the ranchmen have themselves stopped

such outrages. The Indians behave in the same way. There is a peaceful tribe not very far from us which harbors two or three red horse-thieves, who steal from the whites at every chance. Recently, in our country, an expedition was raised to go against these horse-thieves, and it was only with the utmost difficulty that it was stopped: had it actually gone, accompanied as it would have been by scoundrels bent on plunder as well as by wronged men who thought all redskins pretty much alike, the inevitable result would have been a bloody fight with all the Indians, both good and bad.

Not only do Indians differ individually, but they differ as tribes. An upper-class Cherokee is nowadays as good as a white. The Nez Percés differ from the Apaches as much as a Scotch laird does from a Calabrian bandit. A Cheyenne warrior is one of the most redoubtable foes in the whole world; a "digger" Snake one of the most despicable. The Pueblo is as thrifty, industrious, and peaceful as any European peasant, and no Arab of the Soudan is a lazier, wilder robber than is the Arapahoe.

The frontiersmen themselves differ almost as widely from one another. But in the event of an Indian outbreak all suffer alike, and so all are obliged to stand together: when the reprisals for a deed of guilt are sure to fall on the innocent, the latter have no resource save to ally themselves with the guilty. Moreover, even the best Indians are very apt to have a good deal of the wild beast in them; when they scent blood they wish their share of it, no matter from whose veins it flows. I once had a German in my employ, who, when a young child, had lost all his relations by a fate so terrible that it had weighed down his whole after-life. His family was living out on the extreme border at the time of the

great Sioux outbreak toward the end of the Civil War. There were many Indians around, seemingly on good terms with them; and to two of these Indians they had been able to be of much service, so that they became great friends. When the outbreak occurred, the members of this family were among the first captured. The two friendly Indians then endeavored to save their lives, doing all they could to dissuade their comrades from committing violence. Finally, after an angry discussion, the chief, who was present, suddenly ended it by braining the mother. The two former friends then, finding their efforts useless, forthwith turned round and joined with the others, first in violating the wretched daughters, and then in putting them to death with tortures that cannot even be hinted at. The boy alone was allowed to live. If he had been a native-born frontiersman, instead of a peaceful, quiet German, he probably would have turned into an inveterate Indian-slayer, resolute to kill any of the hated race wherever and whenever met—a type far from unknown on the border, of which I have myself seen at least one example.

With this incident it is only fair to contrast another that I heard related while spending the night in a small cow-ranch on the Beaver, whither I had ridden on one of our many tedious hunts after lost horses. Being tired, I got into my bunk early, and while lying there listened to the conversation of two cowboys—both strangers to me—who had also ridden up to the ranch to spend the night. They were speaking of Indians, and mentioned, certainly without any marked disapprobation, a jury that had just acquitted a noted horse-thief of the charge of stealing stock from some Piegans, though he himself had openly admitted its truth.

One, an unprepossessing, beetle-browed man, suddenly remarked that he had once met an Indian who was a pretty good fellow, and he proceeded to tell the story. A small party of Indians had passed the winter near the ranch at which he was employed. The chief had two particularly fine horses, which so excited his cupidity that one night he drove them off and "cached" —that is, hid—them in a safe place. The chief looked for them high and low, but without success. Soon afterward one of the cowboy's own horses strayed. When spring came the Indians went away; but three days afterward the chief returned, bringing with him the strayed horse which he had happened to run across. "I couldn't stand that," said the narrator, "so I just told him I reckoned I knew where his own lost horses were, and I saddled up my bronc' and piloted him to them."

Here and there on the border there is a certain amount of mixture with the Indian blood; much more than is commonly supposed. One of the most hard-working and prosperous men in our neighborhood is a Chippewa half-breed; he is married to a white wife, and ranks in every respect as a white. Two of our richest cattlemen are married to Indian women; their children are being educated in convents. In several of the most thriving Northwestern cities men could be pointed out, standing high in the community, who have a strong dash of Indian blood in their veins. Often, however, especially in the lower classes, they seem to feel some shame about admitting the cross, so that in a couple of generations it is forgotten.

Indians are excellent fighters, though they do not shoot well—being in this respect much inferior not only to the old hunters, but also, nowadays, to the regular

soldiers, who during the past three or four years have improved wonderfully in marksmanship. They have a very effective discipline of their own, and thus a body of them may readily be an overmatch for an equal number of frontiersmen if the latter have no leader whom they respect. If the cowboys have rifles—for the revolver is useless in long-range individual fighting—they feel no fear of the Indians, so long as there are but half a dozen or so on a side; but, though infinitely quicker in their movements than regular cavalry, yet, owing to their heavy saddles, they are not able to make quite so wonderful marches as the Indians do, and their unruly spirit often renders them ineffective when gathered in any number without a competent captain. Under a man like Forrest they would become the most formidable fighting horsemen in the world.

In the summer of 1886, at the time of the war scare over the "Cutting incident," we began the organization of a troop of cavalry in our district, notifying the secretary of war that we were at the service of the government, and being promised every assistance by our excellent chief executive of the Territory, Governor Pierce. Of course the cowboys were all eager for war, they did not much care with whom; they were very patriotic,* they were fond of adventure, and, to tell the truth, they were by no means averse to the prospect of plunder. News from the outside world came to us very irregularly, and often in distorted form, so that we began to think we might get involved in a conflict not only with Mexico but with England also. One evening at my ranch the men began talking over the English soldiers, so I got down "Napier" and read them

* The day that the anarchists were hung in Chicago, my men joined with the rest of the neighborhood in burning them in effigy.

several extracts from his descriptions of the fighting in the Spanish peninsula, also recounting as well as I could the great deeds of the British cavalry from Waterloo to Balaklava, and finishing up by describing from memory the fine appearance, the magnificent equipment, and the superb horses of the Household Cavalry and of a regiment of hussars I had once seen.

All of this produced much the same effect on my listeners that the sight of Marmion's cavalcade produced in the minds of the Scotch moss-troopers on the eve of Flodden; and at the end, one of them, who had been looking into the fire and rubbing his hands together, said with regretful emphasis: "Oh, how I *would* like to kill one of them!"

VIII

SHERIFF'S WORK ON A RANCH

In our own immediate locality we have had more difficulty with white desperadoes than with the redskins. At times there has been a good deal of cattle-killing and horse-stealing, and occasionally a murder or two. But as regards the last, a man has very little more to fear in the West than in the East, in spite of all the lawless acts one reads about. Undoubtedly a long-standing quarrel sometimes ends in a shooting-match; and of course savage affrays occasionally take place in the barrooms; in which, be it remarked, that, inasmuch as the men are generally drunk, and, furthermore, as the revolver is at best a rather inaccurate weapon, outsiders are nearly as apt to get hurt as are the participants. But if a man minds his own business and does not go into barrooms, gambling saloons, and the like, he need have no fear of being molested; while a revolver is a mere foolish encumbrance for any but a trained expert, and need never be carried. Against horse-thieves, cattle-thieves, claim-jumpers, and the like, however, every ranchman has to be on his guard; and armed collisions with these gentry are sometimes inevitable. The fact of such scoundrels being able to ply their trade with impunity for any length of time can only be understood if the absolute wildness of our land is taken into account. The country is yet unsurveyed and unmapped; the course of the river itself, as put down on the various government and railroad maps, is very much a mere piece of guesswork, its bed being in

many parts—as by my ranch—ten or fifteen miles, or more, away from where these maps make it. White hunters came into the land by 1880; but the actual settlement only began in 1882, when the first cattlemen drove in their herds, all of Northern stock, the Texans not passing north of the country around the headwaters of the river until the following year, while until 1885 the territory through which it ran for the final hundred and fifty miles before entering the Big Missouri remained as little known as ever.

Some of us had always been anxious to run down the river in a boat during the time of the spring floods, as we thought we might get good duck and goose shooting, and also kill some beaver, while the trip would, in addition, have all the charm of an exploring expedition. Twice, so far as we knew, the feat had been performed, both times by hunters, and in one instance with very good luck in shooting and trapping. A third attempt, by two men on a raft, made the spring preceding that on which we made ours, had been less successful; for, when a score or so of miles below our ranch, a bear killed one of the two adventurers, and the survivor returned.

We could only go down during a freshet; for the Little Missouri, like most plains rivers, is usually either a dwindling streamlet, a mere slender thread of sluggish water, or else a boiling, muddy torrent running over a bed of shifting quicksand, that neither man nor beast can cross. It rises and falls with extraordinary suddenness and intensity, an instance of which has just occurred as this very page is being written. Last evening, when the moon rose, from the ranch veranda we could see the river-bed almost dry, the stream having shrunk under the drought till it was little but a string of shallow

pools, with between them a trickle of water that was not ankle-deep, and hardly wet the fetlocks of the saddle band when driven across it; yet at daybreak this morning, without any rain having fallen near us, but doubtless in consequence of some heavy cloudburst near its head, the swift, swollen current was foaming brim-high between the banks, and even the fords were swimming-deep for the horses.

Accordingly we had planned to run down the river some time toward the end of April, taking advantage of a rise; but an accident made us start three or four weeks sooner than we had intended.

In 1886 the ice went out of the upper river very early, during the first part of February; but it at times almost froze over again, the bottom ice did not break up, and a huge gorge, scores of miles in length, formed in and above the bend known as the Ox-bow, a long distance upstream from my ranch. About the middle of March this great Ox-bow jam came down past us. It moved slowly, its front forming a high, crumbling wall, and creaming over like an immense breaker on the seashore; we could hear the dull roaring and crunching as it ploughed down the river-bed long before it came in sight round the bend above us. The ice kept piling and tossing up in the middle, and not only heaped itself above the level of the banks, but also in many places spread out on each side beyond them, grinding against the cottonwood-trees in front of the ranch veranda, and at one moment bidding fair to overwhelm the house itself. It did not, however, but moved slowly down past us with that look of vast, resistless, relentless force that any great body of moving ice, as a glacier or an iceberg, always conveys to the beholder. The heaviest pressure from the water that was backed up behind

being, of course, always in the middle, this part kept breaking away, and finally was pushed on clear through, leaving the river so changed that it could hardly be known. On each bank and for a couple of hundred feet out from it into the stream was a solid mass of ice, edging the river along most of its length, at least as far as its course lay through lands that we knew; and in the narrow channel between the sheer ice-walls the water ran like a mill-race.

At night the snowy, glittering masses, tossed up and heaped into fantastic forms, shone like crystal in the moonlight; but they soon lost their beauty, becoming fouled and blackened, and at the same time melted and settled down until it was possible to clamber out across the slippery hummocks.

We had brought out a clinker-built boat especially to ferry ourselves over the river when it was high, and were keeping our ponies on the opposite side, where there was a good range shut in by some very broken country that we knew they would not be apt to cross. This boat had already proved very useful and now came in handier than ever, as without it we could take no care of our horses. We kept it on the bank, tied to a tree, and every day would carry it or slide it across the hither ice bank, usually with not a little tumbling and scrambling on our part, lower it gently into the swift current, pole it across to the ice on the farther bank, and then drag it over that, repeating the operation when we came back. One day we crossed and walked off about ten miles to a tract of wild and rugged country, cleft in every direction by ravines and cedar canyons, in the deepest of which we had left four deer hanging a fortnight before, as game thus hung up in cold weather keeps indefinitely. The walking was very bad, espe-

cially over the clay buttes; for the sun at midday had enough strength to thaw out the soil to the depth of a few inches only, and accordingly the steep hillsides were covered by a crust of slippery mud, with the frozen ground underneath. It was hard to keep one's footing, and to avoid falling while balancing along the knife-like ridge crests, or while clinging to the stunted sage-brush as we went down into the valleys. The deer had been hung in a thicket of dwarfed cedars; but when we reached the place we found nothing save scattered pieces of their carcasses, and the soft mud was tramped all over with round, deeply marked footprints, some of them but a few hours old, showing that the plunderers of our cache were a pair of cougars—"mountain-lions," as they are called by the Westerners. They had evidently been at work for some time, and had eaten almost every scrap of flesh; one of the deer had been carried for some distance to the other side of a deep, narrow, chasm-like gully, across which the cougar must have leaped with the carcass in its mouth. We followed the fresh trail of the cougars for some time, as it was well marked, especially in the snow still remaining in the bottoms of the deeper ravines; finally it led into a tangle of rocky hills riven by dark cedar-clad gorges, in which we lost it, and we retraced our steps, intending to return on the morrow with a good track-hound.

But we never carried out our intentions, for next morning one of my men, who was out before breakfast, came back to the house with the startling news that our boat was gone—stolen, for he brought with him the end of the rope with which it had been tied, evidently cut off with a sharp knife; and also a red woollen mitten with a leather palm, which he had picked up on the ice. We had no doubt as to who had stolen it; for

whoever had done so had certainly gone down the river in it, and the only other thing in the shape of a boat on the Little Missouri was a small flat-bottomed scow in the possession of three hard characters who lived in a shack, or hut, some twenty miles above us, and whom we had shrewdly suspected for some time of wishing to get out of the country, as certain of the cattlemen had begun openly to threaten to lynch them. They belonged to a class that always holds sway during the raw youth of a frontier community, and the putting down of which is the first step toward decent government. Dakota, west of the Missouri, has been settled very recently, and every town within it has seen strange antics performed during the past six or seven years. Medora, in particular, has had more than its full share of shooting and stabbing affrays, horse-stealing, and cattle-killing. But the time for such things was passing away; and during the preceding fall the vigilantes—locally known as "stranglers," in happy allusion to their summary method of doing justice—had made a clean sweep of the cattle country along the Yellowstone and that part of the Big Missouri around and below its mouth. Be it remarked, in passing, that while the outcome of their efforts had been in the main wholesome, yet, as is always the case in an extended raid of vigilantes, several of the sixty odd victims had been perfectly innocent men who had been hung or shot in company with the real scoundrels, either through carelessness and misapprehension or on account of some personal spite.

The three men we suspected had long been accused—justly or unjustly—of being implicated both in cattle-killing and in that worst of frontier crimes, horse-stealing; it was only by an accident that they had escaped

the clutches of the vigilantes the preceding fall. Their leader was a well-built fellow named Finnigan, who had long red hair reaching to his shoulders, and always wore a broad hat and a fringed buckskin shirt. He was rather a hard case, and had been chief actor in a number of shooting scrapes. The other two were a half-breed, a stout, muscular man, and an old German, whose viciousness was of the weak and shiftless type.

We knew that these three men were becoming uneasy and were anxious to leave the locality; and we also knew that travelling on horseback, in the direction in which they would wish to go, was almost impossible, as the swollen, ice-fringed rivers could not be crossed at all and the stretches of broken ground would form nearly as impassable barriers. So we had little doubt that it was they who had taken our boat; and as they knew there was then no boat left on the river, and as the country along its banks was entirely impracticable for horses, we felt sure they would be confident that there could be no pursuit.

Accordingly we at once set to work in our turn to build a flat-bottomed scow wherein to follow them. Our loss was very annoying, and might prove a serious one if we were long prevented from crossing over to look after the saddle band; but the determining motive in our minds was neither chagrin nor anxiety to recover our property. In any wild country where the power of the law is little felt or heeded, and where every one has to rely upon himself for protection, men soon get to feel that it is in the highest degree unwise to submit to any wrong without making an immediate and resolute effort to avenge it upon the wrong-doers, at no matter what cost of risk or trouble. To submit tamely and meekly to theft or to any other injury, is to invite

almost certain repetition of the offense, in a place where self-reliant hardihood and the ability to hold one's own under all circumstances rank as the first of virtues.

Two of my cowboys, Seawall and Dow, were originally from Maine and were mighty men of their hands, skilled in woodcraft and the use of the axe, paddle, and rifle. They set to work with a will, and, as by good luck there were plenty of boards, in two or three days they had turned out a first-class flat-bottom, which was roomy, drew very little water, and was dry as a bone; and though, of course, not a handy craft, was easily enough managed in going downstream. Into this we packed flour, coffee, and bacon enough to last us a fortnight or so, plenty of warm bedding, and the mess-kit; and early one cold March morning slid it into the icy current, took our seats, and shoved off down the river.

There could have been no better men for a trip of this kind than my two companions, Seawall and Dow. They were tough, hardy, resolute fellows, quick as cats, strong as bears, and able to travel like bull moose. We felt very little uneasiness as to the result of a fight with the men we were after, provided we had anything like a fair show; moreover, we intended, if possible, to get them at such a disadvantage that there would not be any fight at all. The only risk of any consequence that we ran was that of being ambushed; for the extraordinary formation of the Bad Lands, with the ground cut up into gullies, serried walls, and battlemented hill-tops, makes it the country of all others for hiding-places and ambuscades.

For several days before we started the weather had been bitterly cold, as a furious blizzard was blowing; but on the day we left there was a lull, and we hoped a thaw had set in. We all were most warmly and thickly

dressed, with woollen socks and underclothes, heavy jackets and trousers, and great fur coats, so that we felt we could bid defiance to the weather. Each carried his rifle, and we had in addition a double-barrelled duck gun, for water-fowl and beaver. To manage the boat, we had paddles, heavy oars, and long iron-shod poles, Seawall steering while Dow sat in the bow. Altogether we felt as if we were off on a holiday trip, and set to work to have as good a time as possible.

The river twisted in every direction, winding to and fro across the alluvial valley bottom, only to be brought up by the rows of great barren buttes that bounded it on each edge. It had worn away the sides of these till they towered up as cliffs of clay, marl, or sandstone. Across their white faces the seams of coal drew sharp black bands, and they were elsewhere blotched and varied with brown, yellow, purple, and red. This fantastic coloring, together with the jagged irregularity of their crests, channelled by the weather into spires, buttresses, and battlements, as well as their barrenness and the distinctness with which they loomed up through the high, dry air, gave them a look that was a singular mixture of the terrible and the grotesque. The bottoms were covered thickly with leafless cottonwood-trees, or else with withered brown grass and stunted, sprawling sage-bushes. At times the cliffs rose close to us on either hand, and again the valley would widen into a sinuous oval a mile or two long, bounded on every side, as far as our eyes could see, by a bluff line without a break, until, as we floated down close to its other end, there would suddenly appear in one corner a cleft through which the stream rushed out. As it grew dusk the shadowy outlines of the buttes lost nothing of their weirdness; the twilight only made their uncouth shape-

lessness more grim and forbidding. They looked like the crouching figures of great goblin beasts.

> "Those two hills on the right
> Crouched like two bulls locked horn in horn in fight—
> While to the left a tall scalped mountain. . . .
> The dying sunset kindled through a cleft:
> The hills, like giants at a hunting, lay
> Chin upon hand, to see the game at bay—"

might well have been written after seeing the strange, desolate lands lying in western Dakota.

All through the early part of the day we drifted swiftly down between the heaped-up piles of ice, the cakes and slabs now dirty and unattractive-looking. Toward evening, however, there came long reaches where the banks on either side were bare, though even here there would every now and then be necks where the jam had been crowded into too narrow a spot and had risen over the side as it had done upstream, grinding the bark from the big cottonwoods and snapping the smaller ones short off. In such places the ice-walls were sometimes eight or ten feet high, continually undermined by the restless current; and every now and then overhanging pieces would break off and slide into the stream with a loud sullen splash, like the plunge of some great water beast. Nor did we dare to go in too close to the high cliffs, as boulders and earth masses, freed by the thaw from the grip of the frost, kept rolling and leaping down their faces and forced us to keep a sharp lookout lest our boat should be swamped.

At nightfall we landed, and made our camp on a point of wood-covered land jutting out into the stream. We had seen very little trace of life until late in the day, for the ducks had not yet arrived; but in the afternoon

a sharp-tailed prairie-fowl flew across stream ahead of the boat, lighting on a low branch by the water's edge. Shooting him, we landed and picked off two others that were perched high up in leafless cottonwoods, plucking the buds. These three birds served us as supper; and shortly afterward, as the cold grew more and more biting, we rolled in under our furs and blankets and were soon asleep.

In the morning it was evident that instead of thawing it had grown decidedly colder. The anchor-ice was running thick in the river, and we spent the first hour or two after sunrise in hunting over the frozen swamp bottom for whitetail deer, of which there were many tracks; but we saw nothing. Then we broke camp and again started downstream—a simple operation, as we had no tent, and all we had to do was to cord up our bedding and gather the mess-kit. It was colder than before, and for some time we went along in chilly silence, nor was it until midday that the sun warmed our blood in the least. The crooked bed of the current twisted hither and thither, but whichever way it went the icy north wind, blowing stronger all the time, drew steadily up it. One of us remarking that we bade fair to have it in our faces all day, the steersman announced that we couldn't, unless it was the crookedest wind in Dakota; and half an hour afterward we overheard him muttering to himself that it *was* the crookedest wind in Dakota. We passed a group of teepees on one bottom, marking the deserted winter camp of some Grosventre Indians, which some of my men had visited a few months previously on a trading expedition. It was almost the last point on the river with which we were acquainted. At midday we landed on a sand-bar for lunch—a simple enough meal, the tea being boiled over a fire of drift-

wood, that also fried the bacon, while the bread only needed to be baked every other day. Then we again shoved off. As the afternoon waned the cold grew still more bitter, and the wind increased, blowing in fitful gusts against us, until it chilled us to the marrow when we sat still. But we rarely did sit still; for even the rapid current was unable to urge the light-draft scow down in the teeth of the strong blasts, and we only got her along by dint of hard work with pole and paddle. Long before the sun went down the ice had begun to freeze on the handles of the poles, and we were not sorry to haul on shore for the night. For supper we again had prairie-fowl, having shot four from a great patch of bulberry bushes late in the afternoon. A man doing hard open-air work in cold weather is always hungry for meat.

During the night the thermometer went down to zero, and in the morning the anchor-ice was running so thickly that we did not care to start at once, for it is most difficult to handle a boat in the deep frozen slush. Accordingly we took a couple of hours for a deer-hunt, as there were evidently many whitetail on the bottom. We selected one long, isolated patch of tangled trees and brushwood, two of us beating through it while the other watched one end; but almost before we had begun four deer broke out at one side, loped easily off, evidently not much scared, and took refuge in a deep glen or gorge densely wooded with cedars, that made a blind pocket in the steep side of one of the great plateaus bounding the bottom. After a short consultation, one of our number crept round to the head of the gorge, making a wide détour, and the other two advanced up it on each side, thus completely surrounding the doomed deer. They attempted to break out past the man at the head

of the glen, who shot down a couple, a buck and a yearling doe. The other two made their escape by running off over ground so rough that it looked fitter to be crossed by their upland-loving cousins, the blacktail.

This success gladdened our souls, insuring us plenty of fresh meat. We carried pretty much all of both deer back to camp and, after a hearty breakfast, loaded our scow and started merrily off once more. The cold still continued intense, and as the day wore away we became numbed by it, until at last an incident occurred that set our blood running freely again.

We were, of course, always on the alert, keeping a sharp lookout ahead and around us, and making as little noise as possible. Finally our watchfulness was rewarded, for in the middle of the afternoon of this, the third day we had been gone, as we came around a bend, we saw in front of us the lost boat, together with a scow, moored against the bank, while from among the bushes some little way back the smoke of a camp-fire curled up through the frosty air. We had come on the camp of the thieves. As I glanced at the faces of my two followers I was struck by the grim, eager look in their eyes. Our overcoats were off in a second, and after exchanging a few muttered words, the boat was hastily and silently shoved toward the bank. As soon as it touched the shore ice I leaped out and ran up behind a clump of bushes, so as to cover the landing of the others, who had to make the boat fast. For a moment we felt a thrill of keen excitement and our veins tingled as we crept cautiously toward the fire, for it seemed likely that there would be a brush; but, as it turned out, this was almost the only moment of much interest, for the capture itself was as tame as possible.

The men we were after knew they had taken with

them the only craft there was on the river, and so felt perfectly secure; accordingly, we took them absolutely by surprise. The only one in camp was the German, whose weapons were on the ground, and who, of course, gave up at once, his two companions being off hunting. We made him safe, delegating one of our number to look after him particularly and see that he made no noise, and then sat down and waited for the others. The camp was under the lee of a cut bank, behind which we crouched, and, after waiting an hour or over, the men we were after came in. We heard them a long way off and made ready, watching them for some minutes as they walked toward us, their rifles on their shoulders and the sunlight glinting on the steel barrels. When they were within twenty yards or so we straightened up from behind the bank, covering them with our cocked rifles, while I shouted to them to hold up their hands—an order that in such a case, in the West, a man is not apt to disregard if he thinks the giver is in earnest. The half-breed obeyed at once, his knees trembling as if they had been made of whalebone. Finnigan hesitated for a second, his eyes fairly wolfish; then, as I walked up within a few paces, covering the centre of his chest so as to avoid overshooting, and repeating the command, he saw that he had no show, and, with an oath, let his rifle drop and held his hands up beside his head.

It was nearly dusk, so we camped where we were. The first thing to be done was to collect enough wood to enable us to keep a blazing fire all night long. While Seawall and Dow, thoroughly at home in the use of the axe, chopped down dead cottonwood-trees and dragged the logs up into a huge pile, I kept guard over the three prisoners, who were huddled into a sullen

group some twenty yards off, just the right distance for the buckshot in the double-barrel. Having captured our men, we were in a quandary how to keep them. The cold was so intense that to tie them tightly hand and foot meant, in all likelihood, freezing both hands and feet off during the night; and it was no use tying them at all unless we tied them tightly enough to stop in part the circulation. So nothing was left for us to do but to keep perpetual guard over them. Of course we had carefully searched them, and taken away not only their firearms and knives, but everything else that could possibly be used as a weapon. By this time they were pretty well cowed, as they found out very quickly that they would be well treated so long as they remained quiet, but would receive some rough handling if they attempted any disturbance.

Our next step was to cord their weapons up in some bedding, which we sat on while we took supper. Immediately afterward we made the men take off their boots—an additional safeguard, as it was a cactus country, in which a man could travel barefoot only at the risk of almost certainly laming himself for life—and go to bed, all three lying on one buffalo-robe and being covered by another, in the full light of the blazing fire. We determined to watch in succession a half-night apiece, thus each getting a full rest every third night. I took first watch, my two companions, revolver under head, rolling up in their blankets on the side of the fire opposite that on which the three captives lay; while I, in fur cap, gantlets, and overcoat, took my station a little way back in the circle of firelight, in a position in which I could watch my men with the absolute certainty of being able to stop any movement, no matter how sudden. For this night-watching we always used the

double-barrel with buckshot, as a rifle is uncertain in the dark; while with a shotgun at such a distance, and with men lying down, a person who is watchful may be sure that they cannot get up, no matter how quick they are, without being riddled. The only danger lies in the extreme monotony of sitting still in the dark guarding men who make no motion, and the consequent tendency to go to sleep, especially when one has had a hard day's work and is feeling really tired. But neither on the first night nor on any subsequent one did we ever abate a jot of our watchfulness.

Next morning we started downstream, having a well-laden flotilla, for the men we had caught had a good deal of plunder in their boats, including some saddles, as they evidently intended to get horses as soon as they reached a part of the country where there were any, and where it was possible to travel. Finnigan, who was the ringleader, and the man I was especially after, I kept by my side in our boat, the other two being put in their own scow, heavily laden and rather leaky, and with only one paddle. We kept them just in front of us, a few yards distant, the river being so broad that we knew, and they knew also, any attempt at escape to be perfectly hopeless.

For some miles we went swiftly downstream, the cold being bitter and the slushy anchor-ice choking the space between the boats; then the current grew sluggish, eddies forming along the sides. We paddled on until, coming into a long reach where the water was almost backed up, we saw there was a stoppage at the other end. Working up to this, it proved to be a small ice-jam, through which we broke our way only to find ourselves, after a few hundred yards, stopped by another. We had hoped that the first was merely a jam

of anchor-ice, caused by the cold of the last few days; but the jam we had now come to was black and solid, and, running the boats ashore, one of us went off down the bank to find out what the matter was. On climbing a hill that commanded a view of the valley for several miles, the explanation became only too evident—as far as we could see, the river was choked with black ice. The great Ox-bow jam had stopped, and we had come down to its tail.

We had nothing to do but to pitch camp, after which we held a consultation. The Little Missouri has much too swift a current—when it has any current at all—with too bad a bottom, for it to be possible to take a boat upstream; and to walk meant, of course, abandoning almost all we had. Moreover we knew that a thaw would very soon start the jam, and so made up our minds that we had best simply stay where we were, and work downstream as fast as we could, trusting that the spell of bitter weather would pass before our food gave out.

The next eight days were as irksome and monotonous as any I ever spent: there is very little amusement in combining the functions of a sheriff with those of an arctic explorer. The weather kept as cold as ever. During the night the water in the pail would freeze solid. Ice formed all over the river, thickly along the banks; and the clear, frosty sun gave us so little warmth that the melting hardly began before noon. Each day the great jam would settle downstream a few miles, only to wedge again, leaving behind it several smaller jams, through which we would work our way until we were as close to the tail of the large one as we dared to go. Once we came round a bend and got so near that we were in a good deal of danger of being

sucked under. The current ran too fast to let us work back against it, and we could not pull the boat up over the steep banks of rotten ice, which were breaking off and falling in all the time. We could only land and snub the boats up with ropes, holding them there for two or three hours until the jam worked down once more—all the time, of course, having to keep guard over the captives, who had caused us so much trouble that we were bound to bring them in, no matter what else we lost.

We had to be additionally cautious on account of being in the Indian country, having worked down past Killdeer Mountains, where some of my cowboys had run across a band of Sioux—said to be Tetons—the year before. Very probably the Indians would not have harmed us anyhow, but as we were hampered by the prisoners, we preferred not meeting them; nor did we, though we saw plenty of fresh signs, and found, to our sorrow, that they had just made a grand hunt all down the river, and had killed or driven off almost every head of game in the country through which we were passing.

As our stock of provisions grew scantier and scantier, we tried in vain to eke it out by the chase; for we saw no game. Two of us would go out hunting at a time, while the third kept guard over the prisoners. The latter would be made to sit down together on a blanket at one side of the fire, while the guard for the time being stood or sat some fifteen or twenty yards off. The prisoners being unarmed, and kept close together, there was no possibility of their escaping, and the guard kept at such a distance that they could not overpower him by springing on him, he having a Winchester or the double-barrelled shotgun always in his hands cocked

and at the ready. So long as we kept wide awake and watchful, there was not the least danger, as our three men knew us and understood perfectly that the slightest attempt at a break would result in their being shot down; but, although there was thus no risk, it was harassing, tedious work, and the strain, day in and day out, without any rest or let-up, became very tiresome.

The days were monotonous to a degree. The endless rows of hills bounding the valley, barren and naked, stretched along without a break. When we rounded a bend, it was only to see on each hand the same lines of broken buttes dwindling off into the distance ahead of us as they had dwindled off into the distance behind. If, in hunting, we climbed to their tops, as far as our eyes could scan there was nothing but the great rolling prairie, bleak and lifeless, reaching off to the horizon. We broke camp in the morning, on a point of land covered with brown, leafless, frozen cottonwoods; and in the afternoon we pitched camp on another point in the midst of a grove of the same stiff, dreary trees. The discolored river, whose eddies boiled into yellow foam, flowed always between the same banks of frozen mud or of muddy ice. And what was, from a practical standpoint, even worse, our diet began to be as same as the scenery. Being able to kill nothing, we exhausted all our stock of provisions, and got reduced to flour, without yeast or baking-powder; and unleavened bread, made with exceedingly muddy water, is not, as a steady thing, attractive.

Finding that they were well treated and were also watched with the closest vigilance, our prisoners behaved themselves excellently and gave no trouble, though afterward, when out of our hands and shut up

in jail, the half-breed got into a stabbing affray. They conversed freely with my two men on a number of indifferent subjects, and after the first evening no allusion was made to the theft or anything connected with it; so that an outsider overhearing the conversation would never have guessed what our relations to each other really were. Once, and once only, did Finnigan broach the subject. Somebody had been speaking of a man whom we all knew, called "Calamity," who had been recently taken by the sheriff on a charge of horse-stealing. Calamity had escaped once, but was caught at a disadvantage the next time; nevertheless, when summoned to hold his hands up, he refused, and attempted to draw his own revolver, with the result of having two bullets put through him. Finnigan commented on Calamity as a fool for "not knowing when a man had the drop on him"; and then, suddenly turning to me, said, his weather-beaten face flushing darkly: "If I'd had any show at all, you'd have sure had to fight, Mr. Roosevelt; but there wasn't any use making a break when I'd only have got shot myself, with no chance of harming any one else." I laughed and nodded, and the subject was dropped.

Indeed, if the time was tedious to us, it must have seemed never-ending to our prisoners, who had nothing to do but to lie still and read, or chew the bitter cud of their reflections, always conscious that some pair of eyes was watching them every moment, and that at least one loaded rifle was ever ready to be used against them. They had quite a stock of books, some of a rather unexpected kind. Dime novels and the inevitable "History of the James Brothers"—a book that, together with the *Police Gazette*, is to be found in the hands of every professed or putative ruffian in the

West—seemed perfectly in place; but it was somewhat surprising to find that a large number of more or less drearily silly "society" novels, ranging from Ouida's to those of The Duchess and Augusta J. Evans, were most greedily devoured. As for me, I had brought with me "Anna Karénina," and my surroundings were quite gray enough to harmonize well with Tolstoï.

Our commons grew shorter and shorter; and finally even the flour was nearly gone, and we were again forced to think seriously of abandoning the boats. The Indians had driven all the deer out of the country; occasionally we shot prairie-fowl, but they were not plentiful. A flock of geese passed us one morning, and afterward an old gander settled down on the river near our camp; but he was over two hundred yards off, and a rifle-shot missed him. Where he settled down, by the way, the river was covered with thick glare ice that would just bear his weight; and it was curious to see him stretch his legs out in front and slide forty or fifty feet when he struck, balancing himself with his outspread wings.

But when the day was darkest the dawn appeared. At last, having worked down some thirty miles at the tail of the ice-jam, we struck an outlying cow camp of the C Diamond (C ◊) ranch, and knew that our troubles were almost over. There was but one cowboy in it, but we were certain of his cordial help, for in a stock country all make common cause against either horse-thieves or cattle-thieves. He had no wagon, but told us we could get one up at a ranch near Killdeer Mountains, some fifteen miles off, and lent me a pony to go up there and see about it—which I accordingly did, after a sharp preliminary tussle when I came to mount the wiry bronco (one of my men remarking in a

loud aside to our cowboy host, "the boss ain't no bronco-buster"). When I reached the solitary ranch spoken of, I was able to hire a large prairie-schooner and two tough little bronco mares, driven by the settler himself, a rugged old plainsman, who evidently could hardly understand why I took so much bother with the thieves instead of hanging them offhand. Returning to the river the next day, we walked our men up to the Killdeer Mountains. Seawall and Dow left me the following morning, went back to the boats, and had no further difficulty, for the weather set in very warm, the ice went through with a rush, and they reached Mandan in about ten days, killing four beaver and five geese on the way, but lacking time to stop to do any regular hunting.

Meanwhile I took the three thieves into Dickinson, the nearest town. The going was bad, and the little mares could only drag the wagon at a walk; so, though we drove during the daylight, it took us two days and a night to make the journey. It was a most desolate drive. The prairie had been burned the fall before, and was a mere bleak waste of blackened earth, and a cold, rainy mist lasted throughout the two days. The only variety was where the road crossed the shallow headwaters of Knife and Green Rivers. Here the ice was high along the banks, and the wagon had to be taken to pieces to get it over. My three captives were unarmed, but as I was alone with them, except for the driver, of whom I knew nothing, I had to be doubly on my guard, and never let them come close to me. The little mares went so slowly, and the heavy road rendered any hope of escape by flogging up the horses so entirely out of the question, that I soon found the safest plan was to put the prisoners in the wagon and myself walk behind with the inevitable Winchester. Accordingly I trudged

steadily the whole time behind the wagon through the ankle-deep mud. It was a gloomy walk. Hour after hour went by always the same, while I plodded along through the dreary landscape—hunger, cold, and fatigue struggling with a sense of dogged, weary resolution. At night, when we put up at the squalid hut of a frontier granger, the only habitation on our road, it was even worse. I did not dare to go to sleep, but making my three men get into the upper bunk, from which they could get out only with difficulty, I sat up with my back against the cabin door and kept watch over them all night long. So, after thirty-six hours' sleeplessness, I was most heartily glad when we at last jolted into the long, straggling main street of Dickinson, and I was able to give my unwilling companions into the hands of the sheriff.

Under the laws of Dakota I received my fees as a deputy sheriff for making the three arrests, and also mileage for the three hundred odd miles gone over—a total of some fifty dollars.*

* One of the men wrote me from prison, giving me his reasons for taking the boat. Part of his letter is worth giving, not only because it contains his own story, but also for the sake of the delicious sense of equality shown in the last few sentences. He had been explaining that he believed I had accused him of stealing some saddles: "In the first place I did not take your boat Mr. Roosevelt because I wanted to steal something, no indeed, when I took that vessel I was labouring under the impression, die dog or eat the hachette. . . . When I was a couple of miles above your ranch the boat I had sprung a leak and I saw that I could not make the Big Missouri in it in the shape that it was in. I thought of asking assistance of you, but I supposed that you had lost some saddles and blamed me for taking them. Now there I was with a leaky boat and under the circumstances what was I two do, two ask you for help, the answer I expected two get was two look down the mouth of a Winchester. I saw your boat and made up my mind two get possession of it. I was bound two get out of that country cost what it might, when people talk lynch law and threaten a persons life, I think that it is about time two leave. I did not want to go back up river on the account that I feared a mob. . . . I have read a good many of your sketches of ranch life in the papers since I have been here, and they interested me deeply.

"Yours sincerely,

"&c.

"P. S. Should you stop over at Bismarck this fall make a call to the Prison. I should be glad to meet you."

IX

THE RANCHMAN'S RIFLE ON CRAG AND PRAIRIE

The ranchman owes to his rifle not only the keen pleasure and strong excitement of the chase but also much of his bodily comfort; for, save for his prowess as a hunter and his skill as a marksman with this, his favorite, weapon, he would almost always be sadly stinted for fresh meat. Now that the buffalo have gone, and the Sharp's rifle by which they were destroyed is also gone, almost all ranchmen use some form of repeater. Personally I prefer the Winchester, using the new model, with a forty-five-caliber bullet of three hundred grains, backed by ninety grains of powder, or else falling back on my faithful old standby, the 45–75. But the truth is that all good modern rifles are efficient weapons; it is the man behind the gun that makes the difference. An inch or two in trajectory or a second or two in rapidity of fire is as nothing compared to sureness of eye and steadiness of hand.

From April to August antelope are the game we chiefly follow, killing only the bucks; after that season, blacktail and whitetail deer. Now and then we get a chance at mountain-sheep, and more rarely at larger game still. As a rule, I never shoot anything but bucks. But in the rutting season, when the bucks' flesh is poor, or when we need to lay in a good stock of meat for the winter, this rule of course must be broken.

The smoked venison stored away in the fall lasts us through the bitter weather, as well as through the even

less attractive period covering the first weeks of spring. At that time we go out as little as possible. The roads are mere morasses, crusted after nightfall with a shell of thin ice through which the shaggy horses break heavily. Walking is exceedingly tiresome, the boots becoming caked with masses of adhesive clay. The deer stay with us all the time; but they are now in poor condition, the does heavy with fawn and the bucks with ungrown antlers.

Antelope gather together in great bands in the fall, and either travel south, leaving the country altogether, or else go to some out-of-the-way place where they are not likely to be disturbed. Antelope are queer, freaky beasts, and it is hard to explain why, when most of these great bands go off south, one or two always stay in the Bad Lands. Such a band having chosen its wintering ground, which is usually in a valley or on a range of wide plateaus, will leave it only with great reluctance, and if it is discovered by hunters most of its members will surely be butchered before the survivors are willing to abandon the place and seek new quarters.

In April the prong-horned herds come back, but now all broken up into straggling parties. They have regular passes, through which they go every year: there is one such not far from my ranch, where they are certain to cross the Little Missouri in great numbers each spring on their return march. In the fall, when they are travelling in dense crowds, hunters posted in these passes sometimes butcher enormous numbers.

Soon after they come back in the spring they scatter out all over the plains, and for four months after their return—that is, until August—they are the game we chiefly follow. This is because at that time we only hunt enough to keep the ranch in fresh meat, and kill

nothing but the bucks; and as antelope, though they shed their horns, are without them for but a very short time, and as, moreover, they are always seen at a distance, it is easy to tell the sexes apart.

Antelope-shooting is the kind in which a man most needs skill in the use of the rifle at long ranges; for they are harder to get near than any other game—partly from their wariness, and still more from the nature of the ground they inhabit. Many more cartridges are spent, in proportion to the amount of game killed, in hunting antelope than is the case while after deer, elk, or sheep. Even good hunters reckon on using six or seven cartridges for every pronghorn that they kill; for antelope are continually offering standing shots at very long distances, which, nevertheless, it is a great temptation to try, on the chance of luck favoring the marksman. Moreover, alone among plains game, they must generally be shot at over a hundred and fifty yards, and often at between two and three hundred. Over this distance a man will kill occasionally—I have done so myself—but at such long range it is mainly a matter of accident. The best field-shot alive lacks a good deal of always killing, if the distance is much over two hundred yards; and with every increase beyond that amount, the chances of failure augment in geometrical proportion. Exceptional individuals perform marvellous feats with the rifle, exactly as still more exceptional individuals perform marvellous feats with the revolver; but even these men, when they have to guess their distances, miss very often when firing at game three hundred yards, or thereabouts, distant.

As in all other kinds of big-game shooting, success in hunting antelope often depends upon sheer, downright luck. A man may make a week's trip over good ground

and get nothing; and then again he may go to the same place and in two days kill a wagon-load of venison.

In the fall the prairie fires ravage the land, for at the close of summer the matted, sun-dried grass burns like tinder, and the fires are sometimes so numerous as to cover whole counties beneath a pall of smoke, while at night they look very grand, burning in curved lines of wavering flame, now advancing fastest at one point, now at another, as if great red snakes were writhing sideways across the prairie. The land across which they have run remains a blackened, charred waste until the young grass begins to sprout in the spring. The short, tender blades at once change the cinder-colored desert into a bright emerald plain, and are so much more toothsome than the dry, withered winter grass that both stock and game forsake the latter and travel out to the tracts of burned land. The feed on these places is too sparse to support, of itself, horses or cattle, who accordingly do not penetrate far beyond the edges; but antelope are like sheep, and prefer scanty, short herbage, and in consequence at this time fairly swarm in the burned districts. Indeed, they are sometimes so numerous that they can hardly be stalked, as it is impossible to approach any animal without being seen by some of its countless comrades which at once run off and give the alarm.

While on these early spring trips we sometimes vary the sport, and our fare as well, by trying our rifles on the mallards in the reedy sloughs, or on the jack-rabbits as they sit up on their haunches to look at us, eighty or a hundred yards off. Now and then we creep up to and kill the cock prairie-fowl, when they have gathered into their dancing rings to posture with outstretched neck and outspread wings as they shuffle round each other,

keeping up a curious clucking and booming that accord well with their grotesque attitudes.

Late in the season any one of us can usually get antelope in a day's hunt from the ranch by merely riding off alone, with a good hunting-horse, to a great tract of broken, mound-dotted prairie some fifteen miles off, where the pronghorns are generally abundant.

On such a trip I leave the ranch-house by dawn, the rifle across my saddle-bow, and some strips of smoked venison in the saddle pockets. In the cool air the horse lopes smartly through the wooded bottoms. The meadow-larks, with black crescents on their yellow breasts, sing all day long, but the thrushes only in the morning and evening; and their melody is heard at its best on such a ride as this. By the time I get out of the last ravines and canter along the divide, the dark bluff tops in the east have begun to redden in the sunrise, while in the flushed west the hills stand out against a rosy sky. The sun has been up some little time before the hunting-grounds are fairly reached; for the antelope stands alone in being a diurnal game animal that from this peculiarity, as well as from the nature of its haunts, can be hunted as well at midday as at any other hour. Arrived at the hunting-grounds I generally, but not always, dismount and hunt on foot, leaving the horse tethered out to graze.

Lunch is taken at some spring, which may be only a trickle of water at the base of a butte, where a hole must be dug out with knife and hands before the horse can drink. Once or twice I have enjoyed unusual delicacies at such a lunch, in the shape of the eggs of curlew or prairie-fowl baked in the hot ashes.

The day is spent in still-hunting, a much easier task

among the ridges and low hills than out on the gently rolling prairies. Antelope see much better than deer, their great bulging eyes, placed at the roots of the horns, being as strong as twin telescopes. Extreme care must be taken not to let them catch a glimpse of the intruder, for it is then hopeless to attempt approaching them. On the other hand, there is never the least difficulty about seeing them; for they are conspicuous beasts, and, unlike deer, they never hide, being careless whether they are seen or not, so long as they can keep a good lookout. They trust only to their own alert watchfulness and quick senses for safety. The game is carried home behind the saddle; and the bottom on which the ranch-house stands is not often reached until the moon, showing crimson through the haze, has risen above the bluffs that skirt the river.

Antelope are very tough, and will carry off a great deal of lead unless struck in exactly the right place; and even when mortally hit they sometimes receive the blow without flinching, and gallop off as if unharmed. They always should be followed up a little distance after being fired at, as if unhurt. Sometimes they show the rather curious trait of walking backward a number of steps just before falling in death.

Although ordinarily harder to get at than deer, they are far more frequently killed in what may be called accidental ways. At times they seem to be heedless of danger, and they suffer from occasional panic fits of fear or curiosity, when it is no feat at all to slay them. Hunters can thus occasionally rake very large bags of antelope, but a true sportsman who only shoots for peculiarly fine trophies or to supply the ranch table, will not commit such needless butcheries. Often accidents have thrown it into my power to make a big

killing; but the largest number I have ever shot was on one day when I bagged four, all bucks, and then we were sorely in need of fresh meat, and it was an object to get as much as possible. This day's shooting was peculiar because it took place during a heavy rainstorm, which, taken in connection with my own remarkable costume, apparently made the animals act with less than their usual shyness. I wore a great flapping yellow slicker, or oilskin overcoat, about as unlikely a garb as a hunter could possibly don; but it seemed to fascinate the game, for more than once a band huddled up and stood gazing at me while I clambered awkwardly off the horse. The cold rain numbed my fingers and beat into my eyes, and I was hampered by the coat; so I wasted a good many cartridges to get my four head.

In some places they now seem to have learned wisdom, for the slaughter among them has been so prodigious that the survivors have radically changed their character. Their senses are as keen as ever, and their wits much keener. They no longer give way to bursts of panic curiosity; they cannot be attracted by any amount of flagging, or by the appearance of unknown objects, as formerly. Where they are still common, as with us, they refuse, under any stress of danger, to enter woodland or thickets, but keep to the flat or broken plains and the open prairies, which they have from time immemorial inhabited. But elsewhere their very nature seems to have altered. They have not only learned to climb and take to the hills, but, what is even more singular, have intruded on the domain of the elk and the deer, frequently making their abode in the thick timber, and there proving the most difficult of all animals to stalk.

In May and June the little antelope kids appear: funny little fellows, odd and ungainly, but at an astonishingly early age able to run nearly as fast as their parents. They will lie very close if they think that they are unobserved. Once several of us were driving in a herd of cattle while on the round-up. The cattle, travelling in loose order, were a few paces ahead, when, happening to cast down my eyes, I saw, right among their hoofs, a little antelope kid. It was lying flat down with outstretched neck, and did not move, although some of the cattle almost stepped on it. I reined up, got off my horse, and lifted it in my arms. At first it gave two or three convulsive struggles, bleating sharply, then became perfectly passive, standing quietly by me for a minute or two when I put it down, after which it suddenly darted off like a flash. These little antelope kids are very easily tamed, being then very familiar, amusing, and inquisitive—much more so than deer fawns, though they are not so pretty. Within a few days of their birth they stop seeking protection in hiding and adopt the habits of their parents, following them everywhere, or going off on their own account, being almost as swift, although, of course, not nearly so enduring.

Three of us witnessed a rather curious incident last spring, showing how little the bringing forth of a fawn affects the does of either deer or antelope. We were walking through a patch of low brushwood, when up got a blacktail doe and went off at full speed. At the second jump she gave birth to a fawn; but this did not alter her speed in the least, and she ran off quite as well and as fast as ever. We walked up to where she had been lying and found in her bed another fawn, evidently but a few seconds old. We left the two sprawling,

unlicked little creatures where they were, knowing that the mother would soon be back to care for them.

Although sometimes we go out to the antelope ground and back in one day, yet it is always more convenient to take the buckboard with us and spend the night, camping by a water-hole in one of the creeks. The last time we took such a trip I got lost, and nearly spent the night in the open. I had been riding with one of my cowboys, while another acted as teamster and drove the buckboard and pair. We killed two antelope and went into camp rather early. After taking dinner and picketing out the four horses we found it still lacked an hour or two of sunset, and accordingly my companions and I started out on foot, leaving our teamster in camp, and paying no particular heed to our surroundings. We saw a herd of pronghorn and wounded one, which we followed in vain until dusk, and then started to go back to camp. Very soon we found that we had quite a task before us, for in the dim starlight all the hollows looked exactly alike, and the buttes seemed either to have changed form entirely or else loomed up so vaguely through the darkness that we could not place them in the least. We walked on and on until we knew that we must be far past the creek, or coulée, where our camp lay, and then turned toward the divide. The night had grown steadily darker, and we could hear the far-off mutter and roll that told of an approaching thunderstorm. Hour after hour we trudged wearily on, as fast as we could go without stumbling, the gloom and the roughness of the unknown ground proving serious drawbacks to our progress. When on the top of a hillock, the blackness of the hollow beneath was so intense that we could not tell whether we were going to walk down a slope or over a cliff, and in consequence

we met with one or two tumbles. At last we reached the top of a tall butte that we knew must be on the divide. The night was now as dark as pitch, and we were so entirely unable to tell where we were that we decided to give up the quest in despair and try to find some washout that would yield us at least partial shelter from the approaching rain-storm. We had fired off our rifles several times without getting any response; but now, as we took one last look around, we suddenly saw a flash of light, evidently from a gun, flare up through the darkness so far off that no sound came to our ears. We trotted toward it as fast as we could through the inky gloom, and when no longer sure of our direction climbed a little hill, fired off our rifles, and after a minute or two again saw the guiding flash. The next time we had occasion to signal, the answering blaze was accompanied by a faint report; and in a few minutes more, when it was close on midnight, we were warming our hands at the great camp-fire, and hungrily watching the venison steaks as they sizzled in the frying-pan.

The morning after this adventure I shot an antelope before breakfast. We had just risen, and while sitting round the smouldering coals, listening to the simmering of the camp-kettle and the coffee-pot, we suddenly caught sight of a large pronghorn buck that was walking toward us over the hill crest nearly half a mile away. He stopped and stared fixedly at us for a few minutes, and then resumed his course at a leisurely trot, occasionally stopping to crop a mouthful of grass, and paying no further heed to us. His course was one that would lead him within a quarter of a mile of camp, and, grasping my rifle, I slipped off as soon as he was out of sight and ran up over the bluff to intercept him.

Just as I reached the last crest I saw the buck crossing in front of me at a walk, and almost two hundred yards off. I knelt, and, as he halted and turned his head sharply toward me, pulled trigger. It was a lucky shot, and he fell over, with his back broken. He had very unusually good horns; as fine as those of any of his kind that I ever killed.

Antelope often suffer from such freaks of apathetic indifference to danger, which are doubly curious as existing in an animal normally as wary as that wildest of game, the mountain-sheep. They are fond of wandering too, and appear at times in very unlikely places. Thus once, while we were building the cow corral, in an open bottom, five antelope came down. After much snorting and stamping, they finally approached to within fifty yards of the men who were at work, and, as the latter had no weapons with them, retired unmolested.

In winter the great herds consist of the two sexes; and this is true also of the straggling parties that come back to us in spring, soon to split up into smaller ones. During early summer the males may be found singly, or else three or four together, with possibly a barren doe or two; while two or three does, with their kids, and perhaps the last year's young, will form the nucleus of a little flock by themselves. With the coming of the rutting-season they divide into regular bands, for they are polygamous. Every large, powerful buck gathers his little group of does, driving out all his rivals, though perhaps a yearling buck or two will hang round the outskirts at a respectful distance, every now and then rousing the older one to a fit of jealous impatience. More often the young bucks go in small parties by themselves, while those older ones that have been driven out

by their successful rivals wander round singly. The old bucks are truculent and courageous, and do fierce battle with each other until it is evident which is master, when the defeated combatant makes off at top speed. One of these beaten bucks will occasionally get hold of a single doe, whom he promptly appropriates and guards with extreme watchfulness; and, not being overconfident in his own prowess, drives her off very rapidly if any other antelope show signs of coming near. A successful buck may have from four or five to ten or fifteen does in his harem. In such a band there is always an old doe that acts as leader, precisely as with deer and elk. This doe is ever on the alert, is most likely to take the alarm at the approach of danger, and always leads the flight. The buck, however, is prompt to take command, if he sees fit, or deems that the doe's fears have overpowered her judgment; and frequently, when a band is in full flight, the buck may be seen deliberately to round it up and stop it, so that he may gaze on the cause of the alarm—a trait the exercise of which often costs him his life. The bucks occasionally bully the does unmercifully, if they show symptoms of insubordination. Individual antelope vary very widely in speed. Once I fairly rode one down, but this is generally an almost impossible feat. Among deer, the fat, heavy-antlered bucks are usually slower than the does and the young males; but there seems to be little difference of this sort among pronghorns.

With the first touch of sharp fall weather we abandon the chase of the antelope for that of the deer. Then our favorite quarry is the noble blacktail, whose haunts are in the mountains and the high, craggy hills. We kill him by fair still-hunting, and to follow him successfully through the deep ravines and across the steep ridges of

his upland home a man should be sound in wind and limbs, and a good shot with the rifle as well. Many a glorious fall morning I have passed in his pursuit; often, moreover, I have slain him in the fading evening as I walked homeward through the still, dim twilight—for all wild game dearly love the gloaming.

Once on a frosty evening I thus killed one when it was so dark that my aim was little but guesswork. I was walking back to camp through a winding valley, hemmed in by steep cedar-crowned walls of clay and rock. All the landscape glimmered white with the new-fallen snow, and in the west the sky was still red with the wintry sunset. Suddenly a great buck came out of a grove of snow-laden cedars, and walked with swift strides up to the point of a crag that overlooked the valley. There he stood motionless while I crouched unseen in the shadow beneath. As I fired he reared upright and then plunged over the cliff. He fell a hundred feet before landing in the bushes, yet he did not gash or mar his finely moulded head and shapely, massive antlers.

On one of the last days I hunted, in November, 1887, I killed two blacktail, a doe and a buck, with one bullet. They were feeding in a glen high up the side of some steep hills, and by a careful stalk over rough ground I got within fifty yards. Peering over the brink of the cliff-like slope up which I had clambered, I saw them standing in such a position that the neck of the doe covered the buck's shoulder. The chance was too tempting to be lost. My bullet broke the doe's neck, and of course she fell where she was; but the buck went off, my next two or three shots missing him. However, we followed his bloody trail, through the high pass he had crossed, down a steep slope, and roused him

from the brushwood in a valley bottom. He soon halted and lay down again, making off at a faltering gallop when approached, and the third time we came up to him he was too weak to rise. He had splendid antlers.

Sometimes we kill the deer by the aid of hounds. Of these we have two at the ranch. One is a rough-coated, pure-blood Scotch staghound, named Rob. The other, Brandy, is a track-hound, bell-mouthed, lop-eared, keen-nosed, and not particularly fast, but stanch as Death himself. He comes of the old Southern strain; and, indeed, all the best blooded packs of American deerhounds or foxhounds come from what was called the Southern Hound in early seventeenth-century England. Thus he is kin to the hounds of Bellemeade, wherewith General Jackson follows the buck and the gray fox over the beautiful fertile hills of middle Tennessee; and some of the same blood runs in the veins of Mr. Wadsworth's Geneseo hounds, behind which I have ridden as they chased the red fox through the wooded glens and across the open fields of the farms, with their high rail fences.

I often take Rob out when still-hunting blacktail, leading him along in a leash. He is perfectly quiet, not even whimpering; and he is certain to overhaul any wounded deer. A doe or a flying buck is borne to the ground with a single wrench, and killed out of hand; but a buck at bay is a formidable opponent, and no dog can rush in full on the sharp prong points. If the two dogs are together, Rob does most of the killing; Brandy's only function is to distract the attention of an angry buck and then allow Rob to pin him. Once a slightly wounded and very large blacktail buck, started just at nightfall, ran down to the river and made a run-

ning bay of nearly two hours, Rob steadily at him the whole time; it was too dark for us to shoot, but finally, by a lucky throw, one of the men roped the quarry.

Not only will a big blacktail buck beat off a dog or a wolf coming at him in front, but he is an awkward foe for a man. One of them nearly killed a cowboy in my employ. The buck, mortally wounded, had fallen to the shot, and the man rushed up to stick him; then the buck revived for a moment, struck down the man, and endeavored to gore him, but could not, because of the despairing grip with which the man held on to his horns. Nevertheless the man, bruised and cut by the sharp hoofs, was fast becoming too weak to keep his hold, when in the struggle they came to the edge of a wash-out, and fell into it some twelve or fifteen feet. This separated them. The dying buck was too weak to renew the attack, and the man crawled off; but it was months before he got over the effects of the encounter.

Sometimes we kill the whitetail also by fair still-hunting, but more often we shoot them on the dense river-bottoms by the help of the track-hound. We put the dogs into the woods with perhaps a single horseman to guide them and help them rout out the deer, while the rest of us, rifle in hand, ride from point to point outside, or else watch the passes through which the hunted animals are likely to run. It is not a sport of which I am very fond, but it is sometimes pleasant as a variety. The last time that we tried it I killed a buck in the bottom right below our ranch-house, not half a mile off. The river was low, and my post was at its edge, with in front of me the broad sandy flat sparsely covered with willow-brush. Deer are not much afraid of an ordinary noisy hound; they will play round in front of him, head and flag in air; but with Rob it was different. The

gray, wolfish beast, swift and silent, threw them into a panic of terror, and in headlong flight they would seek safety from him in the densest thicket.

On the evening in question one of my cowboys went into the brush with the hounds. I had hardly ridden to my place and dismounted when I heard old Brandy give tongue, the bluffs echoing back his long-drawn baying. Immediately afterward a young buck appeared, coming along the sandy river-bed, trotting or cantering; and very handsome he looked, stepping with a light, high action, his glossy coat glistening, his head thrown back, his white flag flaunting. My bullet struck him too far back, and he went on, turning into the woods. Then the dogs appeared, old Brandy running the scent, while the eager gazehound made wide half-circles round him as he ran; while the cowboy, riding a vicious yellow mustang, galloped behind, cheering them on. As they struck the bloody trail they broke into clamorous yelling, and tore at full speed into the woods. A minute or two later the sound ceased, and I knew that they had run into the quarry.

Sometimes we use the hounds for other game besides deer. A neighboring ranchman had a half-breed fox-and-greyhound, who, single-handed, ran into and throttled a coyote. I have been very anxious to try my dogs on a big wolf, intending to take along a collie and a half-breed mastiff we have to assist at the bay. The mastiff is a good fighter, and can kill a wildcat, taking the necessary punishment well, as we found out when we once trapped one of these small lynxes. Shep, the collie, is an adept at killing badgers, grabbing them from behind and whirling them round, whereas Brandy always gets his great lop ears bitten. But how they would do with a wolf I cannot say; for one of these

long-toothed wanderers is usually able to outrun and outfight any reasonable number of common hounds, and will kill even a big dog very quickly.

A friend of mine, Mr. Heber Bishop, once coursed and killed a wolf with two Scotch deerhounds. After a brisk run the dogs overtook and held the quarry, but could not kill it, and were being very roughly handled when Mr. Bishop came to their assistance. But a ranchman in the Indian Territory has a large pack of these same Scotch dogs trained especially to hunt the wolf; and four or five of the fleet, high-couraged animals cannot only soon overhaul a wolf but can collar and throttle even the largest. Accidents to the pack are, of course, frequent. They say that the worry is enough to make one's hair stand on end.

Before leaving the subject, it is worth noting that we have with us the Canada lynx as well as his smaller brother; and, more singular still, that a wolverene, usually found only in the northern forests, was killed two winters ago in a big woody bottom on the Little Missouri, about forty miles north of Medora. The skin and skull were unmistakable; so there could be no doubt as to the beast's identity.

I have had good sport on the rolling plains, near Mandan, in following a scratch pack of four fleet, long-legged dogs. One was a wire-haired Scotch deerhound; his mate was a superb greyhound, the speediest of the set. Both were possessed of the dauntless courage peculiar to high-bred hunting-dogs. The other two were mongrels, but, nevertheless, game fighters and swift runners: one was a lurcher, and the other a cross between a greyhound and a foxhound—the only one of the four that ever gave tongue. The two former had been used together often, and had slain five coyotes, two deer (whitetails), and an antelope. Both the

antelope and the deer they had fairly run down, having come up close on them, so that they had good send-offs; but there is a wide individual variation among game animals as regards speed, and those that they caught—at any rate, the antelope—may not have been as fleet as most of their kind. They were especially fond of chasing coyotes, and these they easily overtook. When at bay the coyotes fought desperately but unavailingly, the two hounds killing their quarry very quickly, one seizing it by the throat and the other by the flanks, and then stretching it out in a trice. They occasionally received trifling injuries in these contests. The animal that gave them most trouble was a badger which they once found and only killed after prolonged efforts, its squat, muscular form and tough skin making it very difficult for them to get a good hold.

We did not have time to go far from Mandan, and so confined our coursing to jack-rabbits, swifts, and foxes. Of the latter, the great red prairie-fox, we saw but one, which got up so close to the dogs that it had no chance at all, and after a fine burst of a few hundred yards was overtaken and torn to pieces. The swifts are properly called swift-foxes, being rather smaller than the Southern gray fox. Ever since the days of the early explorers they have been reputed to possess marvellous speed, and their common name of "swift," by which they are universally known, perpetuates the delusion; for a delusion it emphatically is, since they are, if anything, rather slow than otherwise. Once, in a snow-storm, I started one up under my horse's feet while riding across the prairie, overtook him in a few strides, and killed him by a lucky shot with the revolver. The speed of the coyote also has been laughably exaggerated. Judging by the records of the hounds, the antelope is the fastest plains animal, the whitetail deer and the jack-

rabbit coming next; then follow, in order, the coyote, the fox, and the swift, which is the slowest of all. Individuals vary greatly, however; thus a fast jack-rabbit might well outrun a slow deer, and of course both coyote and fox will outlast the swifter jack-rabbits. Several dogs should run together, as otherwise a jack or a swift, although overtaken, may yet escape by its dexterity in dodging. The cactus beds often befriend the hunted animals, as the dogs rush heedlessly into them and are promptly disabled, while a rabbit or a fox will slip through without injury.

Two or three of us usually went out together. Our method of procedure was simple. We scattered out, dogs and men, and rode in an irregular line across the country, beating with care the most likely looking places, and following at top speed any game that got up. Sometimes a jack-rabbit, starting well ahead, would run for two miles or over, nearly in a straight line, before being turned by the leading hound; and occasionally one would even get away altogether. At other times it would be overhauled at once and killed instantly, or only prolong its life a few seconds by its abrupt turns and twists. One swift gave us several minutes' chase, although never getting thirty rods from the place where it started. The little fellow went off as merrily as possible, his handsome brush streaming behind him, and, though overtaken at once, dodged so cleverly that dog after dog shot by him. I do not think that a single dog could have killed him.

Coursing is the sport of all sports for ranchmen, now that big animals are growing scarce; and certainly there can be no healthier or more exciting pastime than that of following game with horse and hound over the great Western plains.

X

AN ELK-HUNT IN THE BAD LANDS

This stately and splendid deer, the lordliest of its kind throughout the world, is now fast vanishing. In our own neighborhood it is already almost a thing of the past. But a small band yet lingers round a great tract of prairie and Bad Lands some thirty-five miles from the ranch-house.

One fall I killed a good bull out of the lot. I was hunting on horseback, and roused the elk out of a deep, narrow coulée, heavily timbered, where he was lying by himself. He went straight up the steep side directly opposite to where I stood, for I had leaped off my horse when I heard the crash of the underbrush. When on a level with me, he halted and turned half round to gaze at me across the ravine, and then I shot him.

The next season, when we were sorely in need of meat for smoking and drying, we went after these elk again. At the time most of the ponies were off on one of the round-ups, which indeed I had myself just left. However, my two hunting-horses, Manitou and Sorrel Joe, were at home. The former I rode myself, and on the latter I mounted one of my men who was a particularly good hand at finding and following game. With much difficulty we got together a scrub wagon team of four as unkempt, dejected, and vicious-looking broncos as ever stuck fast in a quicksand or balked in pulling up a steep pitch. Their driver was a crack whip, and their load light, consisting of little but the tent and the bedding; so we got out to the hunting-ground and back in safety; but as the river was high and the horses were weak, we came within an ace of being swamped at one crossing,

and the country was so very rough that we were only able to get the wagon up the worst pitch by hauling from the saddle with the riding-animals.

We camped by an excellent spring of cold, clear water —not a common luxury in the Bad Lands. We pitched the tent beside it, getting enough timber from a grove of ash to make a large fire, which again is an appreciated blessing on the plains of the West, where we often need to carry along with us the wood for cooking our supper and breakfast, and sometimes actually have to dig up our fuel, making the fire of sage-brush roots, eked out with buffalo-chips. Though the days were still warm, the nights were frosty. Our camp was in a deep valley, bounded by steep hills with sloping, grassy sides, one of them marked by a peculiar shelf of rock. The country for miles was of this same character, much broken, but everywhere passable for horsemen, and with the hills rounded and grassy, except now and then for a chain of red scoria buttes or an isolated sugar-loaf cone of gray-and-brown clay. The first day we spent in trying to find the probable locality of our game; and after beating pretty thoroughly over the smoother country, toward nightfall we found quite fresh elk tracks leading into a stretch of very rough and broken land about ten miles from camp.

We started next morning before the gray was relieved by the first faint flush of pink, and reached the broken country soon after sunrise. Here we dismounted and picketed our horses, as the ground we were to hunt through was very rough. Two or three hours passed before we came upon fresh signs of elk. Then we found the trails that two, from the size presumably cows, had made the preceding night, and started to follow them, carefully and noiselessly, my companion taking one side

of the valley in which we were and I the other. The tracks led into one of the wildest and most desolate parts of the Bad Lands. It was now the heat of the day, the brazen sun shining out of a cloudless sky, and not the least breeze stirring. At the bottom of the valley, in the deep, narrow bed of the winding watercourse, lay a few tepid little pools, almost dried up. Thick groves of stunted cedars stood here and there in the glen-like pockets of the high buttes, the peaks and sides of which were bare, and only their lower, terrace-like ledges thinly clad with coarse, withered grass and sprawling sage-brush; the parched hillsides were riven by deep, twisted gorges, with brushwood in the bottoms; and the cliffs of coarse clay were cleft and seamed by sheer-sided, canyon-like gullies. In the narrow ravines, closed in by barren, sun-baked walls, the hot air stood still and sultry; the only living beings were the rattlesnakes, and of these I have never elsewhere seen so many. Some basked in the sun, stretched out at their ugly length of mottled brown and yellow; others lay half under stones or twined in the roots of the sage-brush, and looked straight at me with that strange, sullen, evil gaze, never shifting or moving, that is the property only of serpents and of certain men; while one or two coiled and rattled menacingly as I stepped near.

Yet, though we walked as quietly as we could, the game must have heard or smelt us; for after a mile's painstaking search we came to a dense thicket in which were two beds, evidently but just left, for the twigs and bent grass-blades were still slowly rising from the ground to which the bodies of the elk had pressed them. The long, clean hoof-prints told us that the quarry had started off at a swinging trot. We followed at once,

and it was wonderful to see how such large, heavy beasts had gone up the steepest hillsides without altering their swift and easy gait, and had plunged unhesitatingly over nearly sheer cliffs down which we had to clamber with careful slowness.

They left the strip of rugged Bad Lands and went on into the smoother country beyond, luckily passing quite close to where our horses were picketed. We thought it likely that they would halt in some heavily timbered coulées six or seven miles off; and as there was no need of hurry, we took lunch and then began following them up—an easy feat, as their hoofs had sunk deep into the soft soil, the prints of the dew-claws showing now and then. At first we rode, but soon dismounted, and led our horses.

We found the elk almost as soon as we struck the border of the ground we had marked as their probable halting-place. Our horses were unshod, and made but little noise; and coming to a wide, long coulée filled with tall trees and brushwood, we as usual separated, I going down one side and my companion the other. When nearly half-way down he suddenly whistled sharply, and I of course at once stood still, with my rifle at the ready. Nothing moved, and I glanced at him. He had squatted down and was gazing earnestly over into the dense laurel on my side of the coulée. In a minute he shouted that he saw a red patch in the brush which he thought must be the elk, and that it was right between him and myself. Elk will sometimes lie as closely as rabbits, even when not in very good cover; still I was a little surprised at these not breaking out when they heard human voices. However, there they stayed; and I waited several minutes in vain for them to move. From where I stood it was impossible to see

them, and I was fearful that they might go off down the valley and so offer me a very poor shot. Meanwhile, Manitou, who is not an emotional horse, and is moreover blessed with a large appetite, was feeding greedily, rattling his bridle-chains at every mouthful; and I thought that he would act as a guard to keep the elk where they were until I shifted my position. So I slipped back, and ran swiftly round the head of the coulée to where my companion was still sitting. He pointed me out the patch of red in the bushes, not sixty yards distant, and I fired into it without delay, by good luck breaking the neck of a cow elk, when immediately another one rose up from beside it and made off. I had five shots at her as she ascended the hillside and the gentle slope beyond; and two of my bullets struck her close together in the flank, ranging forward—a very fatal shot. She was evidently mortally hit, and just as she reached the top of the divide she stopped, reeled, and fell over, dead.

We were much pleased with our luck, as it secured us an ample stock of needed fresh meat; and the two elk lay very handily, so that on the following day we were able to stop for them with the wagon on our way homeward, putting them in bodily, and leaving only the entrails for the vultures that were already soaring in great circles over the carcasses.*

* No naturalist ever described the way vultures gather with more scientific accuracy than Longfellow:

"Never stoops the soaring vulture
On his quarry in the desert,
On the sick or wounded bison,
But another vulture, watching
From his high aërial lookout,
Sees the downward plunge, and follows;
And a third pursues the second,
Coming from the invisible ether,
First a speck, and then a vulture,
Till the air is dark with pinions."

Much the finest elk-antlers I ever got as a trophy of my own rifle were from a mighty bull that I killed far to the west of my ranch, in the eastern chains of the Rockies. I shot him early one morning, while still-hunting through the open glades of a great pine forest, where the frosty dew was still heavy on the grass. We had listened to him and his fellows challenging each other all night long. Near by the call of the bulls in the rutting-season—their "whistling," as the frontiersmen term it—sounds harsh and grating; but heard in the depths of their own mountain fastnesses, ringing through the frosty night and echoing across the ravines and under the silent archways of the pines, it has a grand, musical beauty of its own that makes it, to me, one of the most attractive sounds in nature.

At this season the bulls fight most desperately, and their combats are far more often attended with fatal results than is the case with deer. In the grove back of my ranch-house, when we first took possession, we found the skulls of two elk with interlocked antlers; one was a royal, the other had fourteen points. Theirs had been a duel to the death.

In hunting, whether on the prairie or in the deep woods, a man ought to pay great heed to his surroundings, so as not to get lost. To an old hand, getting lost is not so very serious; because, if he has his rifle and some matches, and does not lose his head, the worst that can happen to him is having to suffer some temporary discomfort. But a novice is in imminent danger of losing his wits, and therefore his life. To a man totally unaccustomed to it the sense of utter loneliness is absolutely appalling: the feeling of being lost in the wilderness seems to drive him into a state of panic terror that is frightful to behold, and that in the end renders

him bereft of reason. When he realizes that he is lost he often will begin to travel very fast, and finally run until he falls exhausted—only to rise again and repeat the process when he has recovered his strength. If not found in three or four days, he is very apt to become crazy; he will then flee from the rescuers, and must be pursued and captured as if he were a wild animal.

Since 1884, when I went to the Bighorn Mountains, I have killed no grizzlies. There are some still left in our neighborhood, but they are very shy and live in such inaccessible places that, though I have twice devoted several days solely to hunting them, I was unsuccessful each time. A year ago, however, two cowboys found a bear in the open, and after the expenditure of a great number of cartridges killed it with their revolvers, the bear charging gamely to the last.

But this feat sinks into insignificance when compared with the deed of General W. H. Jackson, of Bellemeade, Tennessee, who is probably the only man living who ever, single-handed, killed a grizzly bear with a cavalry sabre. It was many years ago, when he was a young officer in the United States service. He was with a column of eight companies of mounted infantry under the command of Colonel Andrew Porter, when by accident a bear was roused and lumbered off in front of them. Putting spurs to his thoroughbred, he followed the bear, and killed it with the sabre, in sight of the whole command.

XI

THE BIGHORN SHEEP

It has happened that I have generally hunted bighorn during weather of arctic severity; so that in my mind this great sheep is inseparably associated with snow-clad, desolate wastes, ice-coated crags, and the bitter cold of a northern winter; whereas the sight of a prongbuck, the game that we usually hunt early in the season, always recalls to me the endless green of the midsummer prairies as they shimmer in the sunlight.

Yet in reality the bighorn is by no means confined to any one climatic zone. Along the interminable mountain chains of the Great Divide it ranges south to the hot, dry table-lands of middle Mexico, as well as far to the northward of the Canadian boundary, among the towering and tremendous peaks where the glaciers are fed from fields of everlasting snow. There exists no animal more hardy, nor any better fitted to grapple with the extremes of heat and cold. Droughts, scanty pasturage, or deep snows make it shift its ground, but never mere variation of temperature. The lofty mountains form its favorite abode, but it is almost equally at home in any large tract of very rough and broken ground. It is by no means an exclusively alpine animal, like the white goat. It is not only found throughout the main chains of the Rockies, as well as on the Sierras of the south and the coast ranges of western Oregon, Washington, and British Columbia, but it also exists to the east among the clusters of high hills and the stretches of barren Bad Lands that break the monotonous level of the great plains.

Throughout most of its range the bighorn is a partly migratory beast. In the summer it seeks the highest mountains, often passing above timber-line; and when the fall snows deepen it comes down to the lower spurs or foot-hills, or may even travel some distance southward. If there is a large tract of Bad Lands near the mountains, sheep may be plentiful in them throughout the severe weather, while in the summer not a single individual will be found in its winter haunts, all having then retired to the high peaks.

Sometimes bighorn wander widely for reasons unconnected with the weather: all of those in a district may suddenly leave it and perhaps not return for several years. Such is often the result of a district being settled or being exposed to incessant hunting. After a certain number of sheep have been killed the remainder may all disappear, possibly one or two small bands only staying behind; but it is quite likely that two or three years later the bulk of the vanished host will come back again.

But where the region that they inhabit is cut off from the mountains by settled districts, or by great stretches of plain and prairie, then the sheep that dwell therein can make no such migrations. Thus they live all the year round in the Little Missouri Bad Lands; and though the different bands wander away and to and fro for scores of miles, especially in the fall—for bighorn are far more restless than deer—yet they do not shift their positions much on account of the season, and are often found in precisely the same places both summer and winter. They thus bear with indifference exposure to the extremes of heat and cold in a climate where the yearly variation reaches the utmost possible limit, the thermometer sometimes covering a range of a hundred

and seventy degrees in the course of twelve months. There are few spots on earth much hotter than these Bad Lands during a spell of fierce summer weather, and, unlike the deer, the sheep cannot seek the shade of the dense thickets. In the glare of midday the naked angular hills yield no shelter whatever; the barren ravines between them turn into ovens beneath the brazen sun. The still, lifeless, burning air stifles those who breathe it, while the parched and heat-cracked canyon walls are intolerable to the touch.

But though the mountain-sheep can stand this, and in fact do so with even less protection than the deer, yet they certainly dislike it more than do the latter. If mountains are near, they go up them far sooner and far higher than the deer. On the other hand, they bear the winter blizzards much better, caring less for shelter and keeping their strength pretty well. Ordinarily when in the Bad Lands they do not shift their ground save to get on the lee side of the cliffs, though the deep snows of course drive them from the mountains. A very heavy fall of snow, if they are high up on the hills, occasionally forces a band to enter the evergreen woods and make a regular yard, as deer do, beneath the over-hanging, cover-giving branches; then they subsist on the scanty browse until they can get back to pasturelands. But this is rare. Generally they stay in the open, and bid defiance to the elements; yet, like other game, they often seem to have the knack of foretelling any storm or cold spell of unusual severity and length. On the eve of such a storm they frequently retreat to some secure haven of refuge. This may be a nook or cranny in the rocks, or merely a slight hollow to leeward of a little grove of stunted pines; and there the band may have to stay without food for several days, until the

storm is over. Occasionally they succumb to the deep snow; but if they have any kind of chance for their lives, this happens less often than with either deer or antelope.

The bighorn, or cimarrón sheep, as the Mexicans call it, is the sole American representative of the different kinds of mountain-sheep that are found in the Old World. It is fourfold the weight of the Mediterranean mouflon. Its nearest relative, from which it is with difficulty distinguished, is the huge argali, three or four varieties—some say species—of which are to be found in the highlands of central Asia. The American and Asiatic animals seem to grade into one another as regards size; the north Asiatic argali is said to be no larger than the bighorn, but the giant Himalayan sheep, or nyan, averages heavier, both in body and horns, and especially in length of legs. The horns of the argali have more outward twist. The largest bighorn of which I have ever been able to get authentic record was one killed in Montana by a ranch friend of mine, and carefully weighed and measured at the time. At the shoulder he stood just three feet eight inches; he weighed very nearly four hundred pounds; and his single unbroken horn was in girth nineteen inches, and in length along the curve forty-two. But such a ram is a giant. The largest I have myself shot I had no means of weighing: it was just after the rutting season, and he was as gaunt as a greyhound. At the shoulder he stood three feet five inches; and his horns, which were thick for their length, were in girth sixteen and a half inches, and in length thirty. The nyan of Thibet, on the other hand, stands four feet high; and exceptional rams have horns twenty-three inches round the base and upward of fifty in length, while the average full-

grown one will perhaps have them seventeen inches by thirty-eight. The nyan thus certainly stands before the bighorn, although even among full-grown animals many heads of the latter would be above the average of the former. The difference in the habits of the two animals is very marked, for according to the English sportsmen the nyan keeps exclusively to the high, open plains, or barren, gently sloping hills; whereas the bighorn, like the Old World ibex, is a beast of the crags and precipices, and though sometimes venturing into the level country, yet at the first alarm it invariably dashes for the broken ground.

Our American mountain-sheep usually go in bands of from fifteen to thirty individuals, occasionally of many more; while often small parties of two or three will stay by themselves. In the winter, or sometimes not until the early spring, the old rams separate. The oldest and finest are often found entirely alone, retiring to the most inaccessible solitudes; the younger ones keep in little flocks of perhaps half a dozen or so. The main band then consists only of the ewes, the yearlings, and now and then a two-year-old; and this also is soon broken up, leaving merely the yearlings and the barren ewes, for about the middle of May the ewes that are heavy with young leave the rest, each by herself. Like the old rams, they now seek the most inaccessible and far-off places—high up the mountains, if possible; otherwise, in the barren and unfrequented portions of the Bad Lands, where the steep hills and abrupt valleys are twisted into a mere tangle of precipitous crests and canyons. Here the ewe makes her lying-in bed—oval in shape, like that of a pronghorn or blacktail doe, but made by pawing out, or perhaps merely wearing out, a slight hollow in the bare soil; whereas the doe crushes

down with her weight the long grass of the prairie or thicket. This bed is usually made on the ledge of a cliff, on the side where there is most shelter from the prevailing winds; perhaps it is beneath a great rock or clay boulder, with not so much as a blade of grass around, or it may be partly screened by a few wind-beaten sage-bushes. Generally only one, but sometimes two, young are brought forth at a birth. The young lamb matches his surroundings wonderfully in color, and the ewe is very careful in going to him to be sure that she is unobserved. For the first day or two the lamb trusts for his safety solely to not being seen by the beasts and birds of prey. He crouches flat down, like an antelope fawn, and it is next to impossible for human eyes to discover him save by accident. Once only I stumbled across a newly born lamb. It was about the first of June, and I found him lying by the bed of the mother as I was going along a ledge, scantily covered with sage-brush, in the heart of some high, wild hills, about fifteen miles from my ranch. The little fellow was too young to show much alarm when I handled and petted him and with much difficulty persuaded him to stand up on his helplessly weak and awkward little legs. The mother was about two hundred yards distant, and was greatly frightened when I drew near her offspring; she hung about in the distance for a short time and then dashed off. However, she must have returned when I left; for two or three days later, when from curiosity I came back, the little fellow was gone.

When the young are able to clamber about for short distances almost as well as the old, then the nursing ewes and their lambs rejoin the band, some time in July. The band now keeps in the neighborhood of

water and where the feed is good—comparatively good, at least, for the scanty pasturage that grows on the mountains and barren hills haunted by the sheep would hardly please more luxury-loving animals. The flocks of ewes and lambs are at this time quite easily discovered, but of course no man but a game-butcher would dream of molesting them. In September the young rams begin to join them, and soon afterward the old patriarchs likewise come down from their remote fastnesses.

The rams now fight desperately among themselves for the possession of the ewes, rushing together with a shock that would shatter their skulls were they less strong; while the battered horns, with splintered ends, bear witness to the violence of the contests. These contests are free from one danger, however; the horns do not get interlocked and thus cause the death of both combatants. This is not only a common accident among deer and elk, but it even happens to antelope; I knew of one instance where two pronghorn bucks, who had evidently been battling for a doe, were found dead, side by side, partly eaten by the coyotes. The right horn of one and the left horn of the other had become locked together so firmly, thanks to the prong and the hook at the end, that they could not be drawn apart, and the two beasts had died miserably in consequence. Each herd has some acknowledged master-ram, but he may tolerate the presence of three or four others of lesser degree, together with the ewes, lambs, and yearlings that go to make up the rest of the flock; or else, if a cross old fellow, the master-ram may turn out all the others, or may content himself with a little bunch of merely three or four ewes. So that even at this season several young rams may be found by them-

selves; or a morose old veteran, time-worn and battle-scarred, may keep entirely alone. As soon as the rutting-season is over many of these exiles rejoin the band; and at this time, when the rams are of course in very poor condition, they are all apt to come down on the levels more boldly than at any other season, to get at the good grass, although even now rarely venturing very far from the hills. While thus on the edges of the plains, their natural wariness seems to increase tenfold.

But at all times their habits are very variable; for they are restless, wandering beasts, with something whimsical in their tempers, and given at times to queer freaks. If the fit seize them, and especially if they have been alarmed or annoyed, they may at any time leave their accustomed dwelling-places, or act in a manner absolutely contrary to their usual conduct. About noon one hot midsummer day, three great rams crossed the river just below our ranch, stopping to drink, and spending some time on the sand-bars, occasionally playfully butting at each other. They trotted off before they could be stalked. To get down to the river they had to pass over a level plain half a mile wide; and once across, they went through a dense wood choked with underbrush for nearly half a mile more before again coming to the steep bluffs. On another occasion, in the rutting-season, one of my cowboys encountered a mountain-ram crossing a broad, level river-bottom at midday. Occasionally a ram will join a flock of ewes, or a ewe and a yearling, in the spring. Two or three times I have known them to come boldly up to the bluffs that overlook and skirt a little frontier town, and there to stay grazing or resting for several hours; but they always made off in plenty of time to avoid the hunters who finally went after them. Once I shot one within a

few hundred yards of my ranch-house. I was returning home, weary and unsuccessful, after a long day's tramp over hills where blacktail usually were common. When nearly home I struck into a well-beaten cattle-trail, leading down a deep, narrow ravine which cleft in two a knot of jagged hills; it was a favorite range for our horses, and so was frequently ridden over by the cowboys. On turning round a corner of the ravine, a sudden snort to one side and above me made me hastily look up, shifting my rifle from my shoulder. On my right the sheer wall of clay rose up without a break for perhaps two hundred feet or so, its thin, notched crest showing against the sky-line as sharply as if cut with a knife; and on a little jutting pinnacle was perched a mountain-sheep, its four hoofs all together on a space no larger than the palms of a man's hands. It was facing me and staring down at me, so that the bullet went right into its chest, splitting its heart fairly open. Yet it did not fall forward over the cliff, but wheeled on its haunches and went along the crest at a mad, plunging gallop, finally crossing out of sight. Almost as soon as it disappeared a column of dust rose from the other side of the ridge, making me think that it had fallen some distance, striking hard on the dry clay. The guess was a good one, and when, after a long circle and some climbing, I reached the spot, I found a fine young barren ewe lying dead at the foot of a high cut bank.

But all such instances as these are wholly exceptional, and are chiefly interesting as showing that mountain-sheep act more erratically and less according to rule than do most other kinds of game. They seem to have fits of restless waywardness or even of panic curiosity; and so at times wander into unlooked-for places, or betray a sudden heedlessness of dangers against which

they on ordinary occasions carefully guard. This last freak, however, is generally shown only in very wild localities or among young animals. Where hunters are scarce or almost unknown, all wild animals are very bold. I have seen deer in remote forests, and even in little-hunted localities near my ranch, so tame that they would stand looking at the hunter within fifty yards for several minutes before taking flight. Mountain-sheep under similar circumstances show a lordly disregard for the human intruder, leaving his presence at a leisurely gait, in strong contrast to the mad gallop of their more sophisticated brethren when alarmed.

In fact, much of the wariness among beasts of chase, as well as much of the courage shown by the more ferocious, depends upon the degree in which they have been harried by hunters, although much also depends upon the character of the species. European game is thus generally wilder than American; but no animal could be more difficult to approach than a Maine moose. The deer of the Adirondacks and Alleghanies are almost as wary, and in those parts of the Rockies where they have been much molested, bighorn are as shy as the chamois of the Alps or the ibex of the Pyrenees. So the sloth-bear and leopard of India are now much more vicious and dangerous to man than are the black bear and cougar of the United States, simply because of the different race of human beings by whom they are surrounded.

No animal seems to have been more changed by domestication than the sheep. The timid, helpless, fleecy idiot of the folds, the most foolish of all tame animals, has hardly a trait in common with his self-reliant wild relative who combines the horns of a sheep with the hide of a deer, whose home is in the rocks and the moun-

tains, and who is so abundantly able to take care of himself. Wild sheep are as good mountaineers as wild goats or as mountain-antelopes, and are to the full as wary and intelligent.

A very short experience with the rifle-bearing portion of mankind changes the bighorn into a quarry whose successful chase taxes to the utmost the skill alike of still-hunter and of mountaineer. A solitary old ram seems to be ever on the watch. His favorite resting-place is a shelf or terrace-end high up on some cliff, from whence he can see far and wide over the country round about. The least sound—the rattle of a loose stone, a cough, even a heavy footfall on hard earth—attracts his attention, making him at once clamber up on some peak to try for a glimpse of the danger. His eyes catch the slightest movement. His nose is as keen as an elk's, and gives him surer warning than any other sense; the slightest taint in the air produces immediate flight in the direction away from the danger. But there is one compensation, from the hunter's standpoint, for his wonderfully developed smelling powers; he lives in such very broken country that the currents of air often go over his head, so that it is at times possible to hunt him almost down-wind.

A band of sheep is, if anything, even more difficult to approach than is a single ram; but, on the other hand, it is far easier to get on the track of and to find out, as there are always some young members guilty of indiscretions. All of the flock are ever on the lookout. While the others are grazing, there is always at least one with its head up; and occasionally a particularly watchful ewe will jump up on some boulder, or at least stand with her fore legs against its side, so as to get a wider view. Any unexplained sight or sound is announced

to the rest of the herd by a kind of hissing snort, or sometimes by a stamp of the forefoot on the ground. If the intruder is either smelt or seen, the whole herd instantly break into the strong but not particularly swift gallop which distinguishes the species, and go straight away from the danger toward the roughest ground that they can reach. If, however, only alarmed by a sound or if the suspicious object is some distance off, the animals often run together into a bunch and stand gazing in its direction for a few seconds prior to making off. Among cliffs and precipices the echoes are so confusing that if the hunter keeps out of sight the herd occasionally become utterly bewildered by the firing, and, as a result, spend several fatal minutes in a futile running to and fro, uncertain what course will take them out of danger. One day my cousin West Roosevelt, after a long and careful stalk, got close up to three sheep in a very deep and narrow ravine; and although, owing to their being almost underneath him, he at first overshot, yet all three of the startled and panic-struck animals were killed before they recovered their wits sufficiently to run out of range.

But a chance like this may not happen once in a hunter's lifetime. Of all American game, this is the one in whose pursuit the successful hunter needs to show most skill, hardihood, and resolution. On ordinary occasions a bighorn, when menaced by danger, flees beyond its reach with instant decision and headlong speed, disappearing with incredible rapidity over ground where it needs an expert cragsman to so much as follow at a walk. Its wonderful feats of climbing have, as with the chamois and ibex of the Old World, given rise to many fables, the most wide-spread being the belief that the rams, in plunging down precipices,

alight on their horns. So the chamois was said to hang over ledges by means of its short hooked horns, and when cornered on the edge of a sheer precipice, where there was no escape from the hunter, of its own accord to thrust its body against his outstretched knife—as we read and see pictured in the German hunting books of two or three centuries ago, such as the quaint old "Adeliche Weidwerke."

The mountain-sheep of America, when the choice is open to them, actually seem to prefer regions as wild and rugged as they are sterile. The tufts of grass between the rocks, the scanty blades that grow on the clay buttes, suffice for their wants, and the amount of climbing necessary to get at them is literally a matter of indifference to beasts whose muscles are like whipcord and whose tendons are like steel. A bighorn is a marvellous leaper, perhaps even better when the jump is perpendicular than when it is horizontal. His poise is perfect; his eye and foot work together with unerring accuracy. One will unhesitatingly bound or drop a dozen feet on to a little rock pinnacle where there is scarce a hand's breadth on which to stand. The presence of the tiniest cracks in the otherwise smooth surface of a sheer rock wall enables a mountain-sheep to go up it with ease. The proud, lordly bearing of an old ram makes him look exactly what he is, one of the noblest of game animals; his port is the same whether at rest or in motion. Except when very badly frightened, his movements are all made with a certain self-confident absence of hurry, as if he were conscious of a vast reserve power of strength and activity on which to draw at need. As a mountaineer he is the embodiment of elastic, sinewy strength and self-command rather than of mere nervous agility. He hardly ever

makes a mistake, even when rushing at speed over the slippery, ice-coated crags in winter.

The most difficult of all climbing is to go over rocks when the ice has filled up all the chinks and crannies, and the flat slabs are glassy in their hard smoothness. A blacktail buck is no mean climber; yet under such circumstances I have seen one lose his footing and tumble head over heels, scraping great handfuls of hair off his hide; but I have never known a bighorn to make a misstep. This is undoubtedly largely owing to the difference between the two animals in the structure of their feet. A sheep's hoof is an elastic pad, only the rims and the toe-points being hard, and it thus gets a good grip on the slightest projection, or on any little roughness in the rock. The tracks are very different from deer tracks, being nearly square in form, instead of heart-shaped, the prints of the toes rather deep and wide apart even when the animal has been walking.

A band of sheep will often seem to court certain death by plunging off the brink of what looks like a perpendicular cliff, where there is not a ledge or a crack yielding foothold. In such cases, if the cliff is high, it will be found on examination that it is not quite perpendicular, and that the sheep, in making the fearful descent, from time to time touch or strike the cliff with their hoofs, thus going down in long bounds, keeping their poise all the time. The final bound is often made almost head first, as if they were diving.

Narrow ledges, overlooking an abyss the fathomless depths of which would make even a trained cragsman giddy, are very favorite resorts. So are the crests of the ridges themselves. If in any patch of Bad Lands there is an unusually high chain of steep, bare clay

buttes, mountain-sheep are sure to select their tops as a regular parade-ground. After a rain the clay takes their hoof-prints as clearly as if it were sealing-wax, and all along the top of the crest they beat out a regular walk from one end to the other, with occasional little side-paths leading out to some overhanging shoulder or jutting spur, from whence there is a good view of the surrounding country.

Generally the band is led by a ewe; but in a case of immediate and pressing danger the ram assumes the headship. Aside from man, mountain-sheep have fewer foes than most other game. Bears are too clumsy to catch them; and lynx and fox, inveterate enemies of fawns, rarely get up to the high, breezy nurseries of the young lambs. Wolves and cougars, however, harass them greatly. A wolf will not attack an old ram if he can help it, but sneaks after the ewes and lambs, waiting until they get on somewhat level ground, and then running one down by sheer speed before it can take refuge among the secure fastnesses of the precipices.

The cougar relies on stealth, not on speed, and gets his game either by fair stalking or else by lying in wait. Sometimes he can creep up to a band while they are taking their siesta; but generally they keep too sharp a lookout, and he has to approach them while they are feeding, or when they have come down to drink. Some fifteen miles from my ranch is a tract of very rough country, the sides of the hills falling off into precipices or into dark, cedar-clad gorges. This was a favorite resort of mountain-sheep; but one spring a couple of cougars took up their abode in the neighborhood, and soon killed several of the sheep and drove the others away. Judging by the tracks and by the position of

the carcasses, they must have done the killing in the morning and evening, creeping up to the doomed animals as they fed on the lower slopes, or lurking round the spring holes and little alkali pools where they drank. The great war-eagle is one of the worst enemies of the young lambs.

In the rutting-season a ram will make a good fight if he has any chance at all, and at that time is very bold and pugnacious. If followed by a dog he will frequently decline to run, turning to bay at once. One hunter whom I knew killed several in this way by the aid of a collie. Of course it cannot be done when once the sheep have begun to realize that the dog is merely an ally of the man, for they then look out for the latter.

Sheep are easily tamed, if taken young, and make amusing pets. A friend in Helena, Montana, once owned a tame ram. When young he was a great favorite. He was an inquisitive, mischievous creature, of marvellous activity. It was impossible to keep him out of the garden. A single hop would carry him over the high fence; if an inmate of the house came to the rescue, another hop carried the intruder once more into outside safety, and a third took him back again the second the rescuer had turned around. Whenever he got the chance he would pull down the clothes that had been hung up to dry. When he could get inside the house he was fond of walking on the mantelpiece. He was the terror of the Chinese cook, whom he soon discovered to be afraid of him, and would lie in wait outside the kitchen door so as to butt him when he appeared. This was at first done in mere playfulness; but as he grew older he became morose and quarrelsome, and had to be disposed of.

It is impossible to hunt bighorn successfully without

some knowledge of their habits. They go down to drink in the very late evening, or sometimes in the gray of the morning; when the moon is full they may not go to the water until long after nightfall. Generally they drink later than any other game; but all game vary their habits now and then in this regard. The prongbuck, though diurnal, sometimes comes to a watering-hole during the night; and I have once or twice seen both deer and sheep drinking at midday.

In ordinary weather they begin to feed early in the morning, and when the sun has risen some little distance above the horizon they start to graze their way slowly up to the high spur or ridge crest where they intend to lie during the day. Here they stay until well on in the afternoon, and then again descend to their feeding-grounds on the lower slopes. In very cold weather, however, they are apt to be found grazing at midday. A raging snow-blizzard may keep them lying close under cover for three days at a time; they naturally get ravenous, and when there is a lull, or especially if it is succeeded by a short spell of good weather, they come hastily out to feed, no matter what the time of day may be.

As with almost all game except antelope, they can be best hunted in the morning and evening; but, unlike deer, they can also be followed throughout the day, for whereas elk, blacktail, and whitetail have then all alike retired to the thickets, the bighorn take their noontide rest lying out in plain view. If the hunter means to catch them feeding he should make a very early start. A good pair of field-glasses is of great service, for the two essential requisites to success are the capacity to take long walks over rough ground and painstaking care in scanning the country far and wide,

so as to see the game before it sees the hunter. There is then a chance to stalk up close, the broken ground frequently yielding good cover.

Often it may be necessary to lie for hours carefully concealed, watching a flock that is in an unfavorable position, and waiting until it shifts its ground. This is not very comfortable on a cold day in November or December, the months in which I have usually hunted bighorn, devoting the early fall to the chase of elk and deer. But it is often the only way to secure success: patience and perseverance are two of the still-hunter's cardinal virtues. Personally I have always owed whatever success I have had to dogged perseverance and patient persistence, and on a lamentably large number of occasions have had to draw heavily on these qualities to make good a lack of skill, sometimes with the rifle, sometimes in mountaineering. Among many hunting trips I can recall not a few where willingness to lie still two or three hours under trying circumstances in the end got me the game; and one such instance may serve as a sample of the rest.

I was staying at the line camp of two of my cowboys, a small dugout in the side of a butte that marked the edge of the Bad Lands, the rolling prairie coming up to its base. The quarters were cramped for three men, an entire side of the little hut being filled by the two bunks in which we slept—I in the upper, my two companions in the lower—while the fireplace occupied one end, the mess box served as a table, and the earth-covered roof of logs was so low that we could hardly stand upright. Window there was none; but it was snug, and, for a line camp, clean. There was plenty of firewood, and, for a wonder, the chimney did not smoke; so we were comfortable enough. The butte itself

served for three out of the four walls. No other building is so warm as a dugout, and in the terrible winter weather of Dakota and Montana warmth is the one thing for which all else must be sacrificed.*

In such high latitudes the December sun rises late. Long before daybreak we had finished our breakfast of bread, beans, and coffee. The two cowboys had saddled their shaggy ponies—which had spent the night in the rough log stable—and had ridden off in opposite directions along their lonely beat, muffled in their wolf-skin overcoats and heavy chaps; while I strode off on foot toward the high hills that lay riverward, my rifle on my shoulder and my fur cap pulled down well over my ears.

The cold was biting, for even at noon the sun had not power to thaw the frozen ground. But there was very little snow; just enough to powder the hills and to lie in patches in the hollows. I walked rapidly up a long coulée, then climbed up a steep rounded hill and followed the divide back into the heart of the Bad Lands. By the time I was on my chosen hunting-grounds the sun had topped the horizon behind me, and his level rays lit up the peaks and crests.

The next hour was spent in hard climbing and incessant watchfulness. The hills lay in isolated masses. I clambered painfully up their slippery sides, creeping along the narrow icy ledges that ran across the faces of the cliffs, and cautiously working my way over the smooth shoulders. From behind every ridge and spur I carefully examined the opposite hillsides, using the field-glasses if there was scope for them. Sheep, standing still or lying down, are often very hard to see, their

*I have camped out when the thermometer showed sixty-five degrees of frost; *not* -65°, as I see I once put it by a mistake in copying my rough field notes.

coats assimilating curiously with the neutral-tinted cliffs and boulders; but against snow they of course stand out much more distinctly.

At last, as I lay peeping over the ragged crest of a clay butte, I made out a small dark object half-way up a steep slope some six hundred yards down the valley; and another look showed me that it was a ram feeding leisurely up the hillside. The wind was good for a direct approach. I got off the butte by carefully letting myself down from one little ledge or niche to another, and started along the valley toward the ram, only to find my way barred by a deep chasm whose straight, ice-coated sides yawned too far apart to permit of any attempt at crossing. There was no help for it but laboriously to retrace my steps and make my way round its head with what speed I could. This I did, the work making me thoroughly warm for the first time that morning. Once across, the walking was better, and I went down the valley-side at a good pace, until I came to a shoulder some two hundred yards from where I had seen the sheep. I was a good deal higher than where he had stood; but in the time I had been out of sight of him he must have gone up the hill quite a distance, for when I looked round the shoulder I saw him about as far off as I expected, but above instead of below me. Slow though my movements had been when I cautiously looked round the edge, they had not escaped his quick eye; for when I made him out he was standing motionless, gazing in my direction. Before I could raise my rifle he gave a great jump sideways and galloped off, disappearing instantly behind a huge mass of detached sandstone, and I never saw him again.

A little chagrined at my fruitless stalk I plodded on,

doing much hard climbing but seeing no signs of game until nearly midday. Then in the snow at the head of a coulée I came across the tracks of a band evidently made that morning while returning from the feeding-grounds. I followed them until I became convinced that the animals had gone to a great table-land or plateau that I could see a good way ahead; then, as the wind was behind me, I struck off to one side, made a circle through some very rough country, and clambered out along the knife-like crests of a line of high hills separated from the plateau by a broad valley. Every hundred paces or so I would stop and examine the country far and near with the glasses; often I had to crawl on all fours to avoid appearing against the sky-line on the ridge.

At last I caught sight of the band. There were some fifteen or twenty of them, and they were lying at the point of a spur that was thrust out from the plateau, nearly opposite to me and half a mile off. They were in a position which it was impossible to approach within six hundred yards without being observed, for they could see over the level plateau behind them, and from the brink of the lofty cliff on which they lay they looked up, down, and across the wild, deep valley beneath.

With the glasses I could make out that there was no good head among them; but I was out for meat rather than for sport. They were very watchful, ever on the lookout; and as the afternoon wore on one of the more restless would now and then get up, walk off a few steps, or stand gazing intently into the far distance. There was nothing for me to do except to wait until they grew hungry and shifted their position to some place which there was a chance of my approaching unseen. So for

three hours I lay on the iron ground, under the lee of a boulder that but partly shielded me from the wind, munching the strip of jerked venison I had carried in my pocket, and peeping at the sheep through a tuft of tall, coarse grass that grew on top of the ridge.

At last, when it wanted but little more than an hour of sunset, the sheep all got on their legs, one after another, and, led by an old ewe, began to descend into the valley. They went down the cliff by a sort of break or slide, hopping dexterously from rock to rock. On coming to the steep slope at its foot they struck into a trot, which merged into a fast gallop as they got nearly down. I feared that they would stop before coming to the canyon at the bottom of the valley; but they did not, crossing it without hesitation, for all its sheer-sided and slippery depth, and continuing their course toward the end of the chain of hills on which I was, where they halted to graze, after going up nearly to the top. It was excellent ground for a stalk. The ridge went down to the left in the steep, grassy slopes on which they were feeding, while on the right it broke abruptly off into a precipice, with a narrow ledge high up along its face.

This ledge made the approach an easy one. The only difficult places were those where the ledge was interrupted, and I had either cautiously to make my way along the face of the cliff—a very unpleasant task, as the slight hollows or knobs which served me as footholds were slippery with ice, the risk of a fall being thus enormously increased—or else was forced to go to the top, and, sprawling flat on the smooth slope, drag myself along just to one side of the ridge. I had marked the position of the game by a dwarfed cedar that grew in a crevice on the very crest. It gave excel-

lent cover, and on reaching it and peering out through the branches, I saw the sheep scattered out only some sixty yards below me, and, choosing out a fine young ram, I fired, breaking both shoulders. They all rushed together, and then without an instant's pause raced madly down the hillside, neither of the two bullets that I sent after them taking effect. I had no time to lose; so I dressed the ram hastily, tilted him up so that the blood would run out, and left him to be called for with the pony next day. Then I made the best use of the waning light to get to a long divide, furrowed by many buffalo trails, which I knew I could follow even when it grew dark, and which came out on the prairie not very far to one side of the line camp.

The day on which I was lucky enough to shoot my largest and finest ram was memorable in more ways than one. The shot was one of the best I ever made—albeit the element of chance doubtless entered into it far more largely than the element of skill—and in coming home from the hunt I got quite badly frozen.

The day before we had come back from a week's trip after deer; for we were laying in the winter stock of meat. We had been camped far down the river, and had intended to take two days on the return trip, as the wagon was rather heavily loaded, for we had killed eight deer. The morning we broke camp was so mild that I did not put on my heaviest winter clothing, starting off in the same that I had worn during the past few days' still-hunting among the hills. Before we had been gone an hour, however, the sky grew overcast and the wind began to blow from the north with constantly increasing vigor. The sky grew steadily more gloomy and lowering, the gusts came ever harder and harder, and by noon the winter day had darkened and a

furious gale was driving against us. The blasts almost swept me from my saddle and the teamster from his seat, while we were glad to wrap ourselves in our huge fur coats to keep out the growing cold. Soon after midday the wagon suddenly broke down while we were yet in mid-prairie. It was evident that we were on the eve of a furious snow-blizzard, which might last a few hours, or else, perhaps, as many days. We were miles from any shelter that would permit us to light a fire in the face of such a storm; so we left the wagon as it was, hastily unharnessed the team horses, and, with the driver riding one and leading the other, struck off homeward at a steady gallop. Once fairly caught by the blizzard in a country that we only partly knew, it would have been hopeless to do more than to try for some ravine in which to cower till it was over; so we pushed our horses to their utmost pace. Our object was to reach the head coulées of a creek leading down to the river but a few miles from the ranch. Could we get into these before the snow struck us we felt we would be all right, for we could then find our way home, even in pitch-darkness, with the wind in the quarter from which it was coming. So, with the storm on our backs, we rode at full speed through the gathering gloom, across the desolate reaches of prairie. The tough little horses, instead of faltering, went stronger mile by mile. At last the weird rows of hills loomed vaguely up in our front, and we plunged into the deep ravines for which we had been heading just as the whirling white wreaths struck us—not the soft, feathery flakes of a seaboard snow-storm, but fine ice-dust, driven level by the wind, choking us, blinding our eyes, and cutting our faces if we turned toward it. The roar of the blizzard drowned our voices when we were but six feet apart; had it not

been on our backs we could not have gone a hundred yards, for we could no more face it than we could face a frozen sand-blast. In an instant the strange, wild outlines of the high buttes between which we were riding were shrouded from our sight. We had to grope our way through a kind of shimmering dusk; and when once or twice we were obliged by some impassable cliff or canyon to retrace our steps, it was all that we could do to urge the horses even a few paces against the wind-blown snow-grains which stung like steel filings. But this extreme violence only lasted about four hours. The moon was full, and its beams struggled through scudding clouds and snow-drift, so that we reached the ranch without difficulty, and when we got there the wind had already begun to lull. The snow still fell thick and fast; but before we went to bed this also showed signs of stopping. Accordingly we determined that we would leave the wagon where it was for a day or two, and start early next morning for a range of high hills some ten miles off, much haunted by sheep; for we did not wish to let pass the chance of tracking the game offered by the first good snow of the season.

Next morning we started by starlight. The snow lay several inches deep on the ground; the whole land was a dazzling white. It was very cold. Within the ranch everything was frozen solid in spite of the thick log walls; but the air was so still and clear that we did not realize how low the temperature was. Accordingly, as the fresh horse I had to take was young and wild, I did not attempt to wear my fur coat. I soon felt my mistake. The windless cold ate into my marrow; and when, shortly after the cloudless winter sunrise, we reached our hunting-grounds and picketed out the horses, I was already slightly frost-bitten. But the

toil of hunting over the snow-covered crags soon made me warm.

All day we walked and climbed through a white wonderland. On every side the snowy hills, piled one on another, stretched away, chain after chain, as far as sight could reach. The stern and iron-bound land had been changed to a frozen sea of billowy, glittering peaks and ridges. At last, late in the afternoon, three great bighorn suddenly sprang up to our right and crossed the table-land in front of and below us at a strong, stretching gallop. The lengthening sunbeams glinted on their mighty horns; their great supple brown bodies were thrown out in bold relief against the white landscape; as they ploughed with long strides through the powdery snow, their hoofs tossed it up in masses of white spray. On the left of the plateau was a ridge, and as they went up this I twice fired at the leading ram, my bullets striking under him. On the summit he stopped and stood for a moment looking back three hundred and fifty yards off,* and my third shot went fairly through his lungs. He ran over the hill as if unharmed, but lay down a couple of hundred yards on, and was dead when we reached him.

It was after nightfall when we got back to the horses, and we rode home by moonlight. To gallop in such weather insures freezing; so the ponies shambled along at a single-foot trot, their dark bodies white with hoar-frost, and the long icicles hanging from their lips. The cold had increased steadily; the spirit thermometer at the ranch showed 26° Fahrenheit below zero. We had worked all day without food or rest, and were very tired. On the ride home I got benumbed before I knew it and froze my face, one foot, and both knees. Even

* Actual pacing, not guesswork.

my companion, who had a greatcoat, froze his nose and cheeks. Never was a sight more welcome than the gleam of the firelit ranch windows to us that night. But the great ram's head was a trophy that paid for all.

XII

THE GAME OF THE HIGH PEAKS: THE WHITE GOAT

In the fall of 1886 I went far west to the Rockies and took a fortnight's hunting trip among the northern spurs of the Cœur d'Alêne, between the towns of Heron and Horseplains in Montana. There are many kinds of game to be found in the least known or still untrodden parts of this wooded mountain wilderness—caribou, elk, ungainly moose with great shovel horns, cougars, and bears. But I did not have time to go deeply into the heart of the forest-clad ranges, and devoted my entire energies to the chase of but one animal, the white antelope goat, then the least known and rarest of all American game.

We started from one of those most dismal and forlorn of all places, a dead mining town, on the line of the Northern Pacific Railroad. My foreman, Merrifield, was with me, and for guide I took a tall, lithe, happy-go-lucky mountaineer, who, like so many of the restless frontier race, was born in Missouri. Our outfit was simple, as we carried only blankets, a light wagon-sheet, the ever-present camera, flour, bacon, salt, sugar, and coffee; canned goods are very unhandy to pack about on horseback. Our rifles and ammunition, with the few cooking utensils and a book or two, completed the list. Four solemn ponies and a ridiculous little mule named Walla Walla bore us and our belongings. The Missourian was an expert packer, versed in the mysteries of the "diamond hitch," the only arrangement of the ropes that will insure a load staying in its

place. Driving a pack-train through the wooded paths and up the mountain passes that we had to traverse is hard work anyhow, as there are sure to be accidents happening to the animals all the time, while their packs receive rough treatment from jutting rocks and overhanging branches, or from the half-fallen tree trunks under which the animals wriggle; and if the loads are continually coming loose, or slipping so as to gall the horses' backs and make them sore, the labor and anxiety are increased tenfold.

In a day or two we were in the heart of the vast wooded wilderness. A broad, lonely river ran through its midst, cleaving asunder the mountain chains. Range after range, peak upon peak, the mountains towered on every side, the lower timbered to the top, the higher with bare crests of gray crags, or else hooded with fields of shining snow. The deep valleys lay half in darkness, hemmed in by steep, timbered slopes and straight rock walls. The torrents, broken into glittering foam masses, sprang down through the chasms that they had rent in the sides of the high hills, lingered in black pools under the shadows of the scarred cliffs, and reaching the rank, tree-choked valleys, gathered into rapid streams of clear brown water, that drenched the drooping limbs of the tangled alders. Over the whole land lay like a shroud the mighty growth of the unbroken evergreen forest—spruce and hemlock, fir, balsam, tamarack, and lofty pine.

Yet even these vast wastes of shadowy woodland were once penetrated by members of that adventurous and now fast vanishing folk, the American frontiersmen. Once or twice, while walking silently over the spongy moss beneath the sombre archways of the pines, we saw on a tree trunk a dim, faint axe scar, the bark almost

grown over it, showing where, many years before, some fur-trapper had chopped a deeper blaze than usual in making out a "spotted line"—man's first highway in the primeval forest; or on some hillside we would come to the more recent, but already half-obliterated, traces of a miner's handiwork. The trapper and the miner were the pioneers of the mountains, as the hunter and the cowboy have been the pioneers of the plains; they are all of the same type, these sinewy men of the border, fearless and self-reliant, who are ever driven restlessly onward through the wilderness by the half-formed desires that make their eyes haggard and eager. There is no plain so lonely that their feet have not trodden it; no mountain so far off that their eyes have not scanned its grandeur.

We took nearly a week in going to our hunting-grounds and out from them again. This was tedious work, for the pace was slow, and it was accompanied with some real labor. In places the mountain paths were very steep and the ponies could with difficulty scramble along them; and once or twice they got falls that no animals less tough could have survived, Walla Walla being the unfortunate that suffered most. Often, moreover, we would come to a windfall, where the fallen trees lay heaped crosswise on one another in the wildest confusion, and a road had to be cleared by axe work. It was marvellous to see the philosophy with which the wise little beasts behaved, picking their way gingerly through these rough spots, hopping over fallen tree trunks, or stepping between them in places where an Eastern horse would have snapped a leg short off, and walking composedly along narrow ledges with steep precipices below. They were tame and friendly, being turned loose at night, and not only staying near by, but

also allowing themselves to be caught without difficulty in the morning; industriously gleaning the scant food to be found in the burnt places or along the edges of the brooks, and often in the evening standing in a patient, solemn semicircle round the camp-fire, just beyond where we were seated. Walla Walla, the little mule, was always in scrapes. Once we spent a morning of awkward industry in washing our clothes; having finished, we spread the half-cleansed array upon the bushes and departed on a hunt. On returning, to our horror we spied the miserable Walla Walla shamefacedly shambling off from the neighborhood of the wash, having partly chewed up every individual garment and completely undone all our morning's labor.

At first we did not have good weather. The Indians, of whom we met a small band—said to be Flatheads or their kin, on a visit from the coast region—had set fire to the woods not far away, and the smoke became so dense as to hurt our eyes, to hide the sun at midday, and to veil all objects from our sight as completely as if there had been a heavy fog. Then we had two days of incessant rain, which rendered our camp none too comfortable; but when this cleared we found that it had put out the fire and settled all the smoke, leaving a brilliant sky overhead.

We first camped in a narrow valley, surrounded by mountains so tall that except at noonday it lay in the shadow; and it was only when we were out late on the higher foot-hills that we saw the sun sink in a flame behind the distant ranges. The trees grew tall and thick, the underbrush choking the ground between their trunks, and their branches interlacing so that the sun's rays hardly came through them. There were very few open glades, and these were not more than a dozen

rods or so across. Even on the mountains it was only when we got up very high indeed or when we struck an occasional bare spur, or shoulder, that we could get a glimpse into the open. Elsewhere we could never see a hundred yards ahead of us, and like all plainsmen or mountaineers we at times felt smothered under the trees, and longed to be where we could look out far and wide on every side; we felt as if our heads were in hoods. A broad brook whirled and eddied past our camp, and a little below us was caught in a deep, narrow gorge, where the strangling rocks churned its swift current into spray and foam, and changed its murmurous humming and splashing into an angry roar. Strange little water-wrens—the water-ousel of the books—made this brook their home. They were shaped like thrushes, and sometimes warbled sweetly, yet they lived right in the torrent, not only flitting along the banks and wading in the edges, but plunging boldly into midstream, and half walking, half flying along the bottom, deep under water, and perching on the slippery, spray-covered rocks of the waterfall or skimming over and through the rapids even more often than they ran along the margins of the deep, black pools.

Whitetail deer were plentiful, and we kept our camp abundantly supplied with venison, varying it with all the grouse that we wanted, and with quantities of fresh trout. But I myself spent most of my time after the quarry I had come to get—the white goat.

White goats have been known to hunters ever since Lewis and Clark crossed the continent, but they have always ranked as the very rarest and most difficult to get of all American game. This reputation they owe to the nature of their haunts, rather than to their own wariness, for they have been so little disturbed that they

are less shy than either deer or sheep. They are found here and there on the highest, most inaccessible mountain peaks down even to Arizona and New Mexico; but, being fitted for cold climates, they are extremely scarce everywhere south of Montana and northern Idaho and the great majority even of the most experienced hunters have hardly so much as heard of their existence. In Washington Territory, northern Idaho, and northwestern Montana they are not uncommon, and are plentiful in parts of the mountain ranges of British America and Alaska. Their preference for the highest peaks is due mainly to their dislike of warmth, and in the north—even south of the Canadian line—they are found much lower down the mountains than is the case farther south. They are very conspicuous animals, with their snow-white coats and polished black horns, but their pursuit necessitates so much toil and hardship that not one in ten of the professional hunters has ever killed one; and I know of but one or two Eastern sportsmen who can boast a goat's head as a trophy. But this will soon cease to be the case; for the Canadian Pacific Railway has opened the haunts where the goats are most plentiful, and any moderately adventurous and hardy rifleman can be sure of getting one by taking a little time, and that, too, whether he is a skilled hunter or not, since at present the game is not difficult to approach. The white goat will be common long after the elk has vanished, and it has already outlasted the buffalo. Few sportsmen henceforth—indeed, hardly any—will ever boast a buffalo-head of their own killing; but the number of riflemen who can place to their credit the prized white fleeces and jet-black horns will steadily increase.

The Missourian, during his career as a Rocky Moun-

tain hunter, had killed five white goats. The first he had shot near Canyon City, Col., and never having heard of any such animal before had concluded afterward that it was one of a flock of recently imported Angora goats, and accordingly, to avoid trouble, buried it where it lay; and it was not until fourteen years later, when he came up to the Cœur d'Alêne and shot another, that he became aware of what he had killed. He described them as being bold, pugnacious animals, not easily startled, and extremely tenacious of life. Once he had set a large hound at one which he came across while descending an ice-swollen river in early spring. The goat made no attempt to flee or to avoid the hound, but coolly awaited its approach and killed it with one wicked thrust of the horns; for the latter are as sharp as needles, and are used for stabbing, not butting. Another time he caught a goat in a bear trap set on a game trail. Its leg was broken, and he had to pack it out on pony-back, a two days' journey, to the settlement; yet in spite of such rough treatment it lived a week after it got there, when, unfortunately, the wounded leg mortified. It fought most determinedly, but soon became reconciled to captivity, eating with avidity all the grass it was given, recognizing its keeper, and grunting whenever he brought it food or started to walk away before it had had all it wished. The goats he had shot lived in ground where the walking was tiresome to the last degree, and where it was almost impossible not to make a good deal of noise; and nothing but their boldness and curiosity enabled him ever to kill any. One he shot while waiting at a pass for deer. The goat, an old male, came up, and fairly refused to leave the spot, walking round in the underbrush and finally mounting a great fallen log,

where he stayed snorting and stamping angrily until the Missourian lost patience and killed him.

For three or four days I hunted steadily and without success, and it was as hard work as any that I had ever undertaken. Both Merrifield and I were accustomed to a life in the saddle, and although we had varied it with an occasional long walk after deer or sheep, yet we were utterly unable to cope with the Missourian when it came to mountaineering. When we had previously hunted, in the Bighorn Mountains, we had found stout moccasins most comfortable, and extremely useful for still-hunting through the great woods and among the open glades; but the multitudinous sharp rocks and sheer, cliff-like slopes of the Cœur d'Alêne rendered our moccasins absolutely useless, for the first day's tramp bruised our feet till they were sore and slit our foot-gear into ribbons, besides tearing our clothes. Merrifield was then crippled, having nothing else but his cowboy boots; fortunately, I had taken in addition a pair of shoes with soles thickly studded with nails.

We would start immediately after breakfast each morning, carrying a light lunch in our pockets, and go straight up the mountainsides for hours at a time, varying it by skirting the broad, terrace-like ledges or by clambering along the cliff crests. The climbing was very hard. The slope was so steep that it was like going upstairs; now through loose earth, then through a shingle of pebbles or sand, then over rough rocks, and again over a layer of pine-needles as smooth and slippery as glass, while brittle, dry sticks that snapped at a touch, and loose stones that rattled down if so much as brushed, strewed the ground everywhere, the climber stumbling and falling over them and finding it almost absolutely impossible to proceed without noise, unless

at a rate of progress too slow to admit of getting anywhere. Often, too, we would encounter dense underbrush, perhaps a thicket of little burnt balsams, as prickly and brittle as so much coral; or else a heavy growth of laurel, all the branches pointing downward, and to be gotten through only by main force. Over all grew the vast evergreen forest, except where an occasional cliff jutted out, or where there were great landslides, each perhaps half a mile long and a couple of hundred yards across, covered with loose slates or granite boulders.

We always went above the domain of the deer, and indeed saw few evidences of life. Once or twice we came to the round footprints of cougars, which are said to be great enemies of the goats, but we never caught a glimpse of the sly beasts themselves. Another time I shot a sable from a spruce up which the little fox-headed animal had rushed with the agility of a squirrel. There were plenty of old tracks of bear and elk, but no new ones; and occasionally we saw the footmarks of the great timber-wolf.

But the trails at which we looked with the most absorbed interest were those that showed the large, round hoof-marks of the white goats. They had worn deep paths to certain clay licks in the slides, which they must have visited often in the early spring, for the trails were little travelled when we were in the mountains, during September. These clay licks were mere holes in the banks, and were in springtime visited by other animals besides goats; there were old deer trails to them. The clay seemed to contain something that both birds and beasts were fond of, for I frequently saw flocks of crossbills light in the licks and stay there for many minutes at a time, scratching the smooth

surface with their little claws and bills. The goat trails led away in every direction from the licks, but usually went uphill, zigzagging or in a straight line, and continually growing fainter as they went farther off, where the animals scattered to their feeding-grounds. In the springtime the goats are clad with a dense coat of long white wool, and there were shreds and tufts of this on all the twigs of the bushes under which the paths passed; in the early fall the coat is shorter and less handsome.

Although these game paths were so deeply worn, they yet showed very little fresh goat sign; in fact, we came across the recent trails of but two of the animals we were after. One of these we came quite close to, but never saw it, for we must have frightened it by the noise we made; it certainly, to judge by its tracks, which we followed for a long time, took itself straight out of the country. The other I finally got, after some heart-breaking work and a complicated series of faults committed and misfortunes endured.

I had been, as usual, walking and clambering over the mountains all day long, and in mid-afternoon reached a great slide, with half-way across it a tree. Under this I sat down to rest, my back to the trunk, and had been there but a few minutes when my companion, the Missourian, suddenly whispered to me that a goat was coming down the slide at its edge, near the woods. I was in a most uncomfortable position for a shot. Twisting my head round, I could see the goat waddling downhill, looking just like a handsome tame billy, especially when at times he stood upon a stone to glance around, with all four feet close together. I cautiously tried to shift my position, and at once dislodged some pebbles, at the sound of which the goat sprang promptly up on the bank, his whole mien changing into one of

alert, alarmed curiosity. He was less than a hundred yards off, so I risked a shot, all cramped and twisted though I was. But my bullet went low; I only broke his left fore leg, and he disappeared over the bank like a flash. We raced and scrambled after him, and the Missourian, an excellent tracker, took up the bloody trail. It went along the hillside for nearly a mile, and then turned straight up the mountain, the Missourian leading with his long, free gait, while I toiled after him at a dogged trot. The trail went up the sharpest and steepest places, skirting the cliffs and precipices. At one spot I nearly came to grief for good and all, for in running along a shelving ledge, covered with loose slates, one of these slipped as I stepped on it, throwing me clear over the brink. However, I caught in a pine top, bounced down through it, and brought up in a balsam with my rifle all right, and myself unhurt except for the shaking. I scrambled up at once and raced on after my companion, whose limbs and wind seemed alike incapable of giving out. This work lasted for a couple of hours.

The trail came into a regular game path and grew fresher, the goat having stopped to roll and wallow in the dust now and then. Suddenly, on the top of the mountain, we came upon him close up to us. He had just risen from rolling and stood behind a huge fallen log, his back barely showing above it as he turned his head to look at us. I was completely winded, and had lost my strength as well as my breath, while great bead-like drops of sweat stood in my eyes; but I steadied myself as well as I could and aimed to break the back-bone, the only shot open to me, and not a difficult one at such a short distance. However, my bullet went just too high, cutting the skin above the long

spinal bones over the shoulders; and the speed with which that three-legged goat went down the precipitous side of the mountain would have done credit to an antelope on the level.

Weary and disgusted, we again took up the trail. It led straight downhill, and we followed it at a smart pace. Down and down it went, into the valley and straight to the edge of the stream, but half a mile above camp. The goat had crossed the water on a fallen tree trunk, and we took the same path. Once across, it had again gone right up the mountain. We followed it as fast as we could, although pretty nearly done out, until it was too dark to see the blood-stains any longer, and then returned to camp, dispirited and so tired that we could hardly drag ourselves along, for we had been going at speed for five hours, up and down the roughest and steepest ground.

But we were confident that the goat would not travel far with such a wound after he had been chased as we had chased him. Next morning at daybreak we again climbed the mountain and took up the trail. Soon it led into others and we lost it, but we kept up the hunt nevertheless for hour after hour, making continually wider and wider circles. At last, about midday, our perseverance was rewarded, for coming silently out on a great bare cliff shoulder, I spied the goat lying on a ledge below me and some seventy yards off. This time I shot true, and he rose only to fall back dead; and a minute afterward we were standing over him, handling the glossy black horns and admiring the snow-white coat.

After this we struck our tent and shifted camp some thirty miles to a wide valley through whose pine-clad bottom flowed a river, hurrying on to the Pacific be-

tween unending forests. On one hand the valley was hemmed in by an unbroken line of frowning cliffs, and on the other by chains of lofty mountains in whose sides the ravines cut deep gashes.

The clear weather had grown colder. At night the frost skimmed with thin ice the edges of the ponds and small lakes that at long intervals dotted the vast reaches of woodland. But we were very comfortable, and hardly needed our furs, for as evening fell we kindled huge fires, to give us both light and warmth; and even in very cold weather a man can sleep out comfortably enough with no bedding if he lights two fires and gets in between them, or finds a sheltered nook or corner across the front of which a single great blaze can be made. The long walks and our work as cragsmen hardened our thews, and made us eat and sleep as even our life on the ranch could hardly do; the mountaineer must always be more sinewy than the horseman. The clear, cold water of the swift streams too was a welcome change from the tepid and muddy currents of the rivers of the plains; and we heartily enjoyed the baths, a plunge into one of the icy pools making us gasp for breath and causing the blood to tingle in our veins with the shock.

Our tent was pitched in a little glade, which was but a few yards across, and carpeted thickly with the red kinnikinic-berries, in their season beloved of bears, and from the leaves of which bush the Indians make a substitute for tobacco. Little three-toed woodpeckers with yellow crests scrambled about over the trees near by, while the great log-cocks hammered and rattled on the tall dead trunks. Jays that were dark blue all over came familiarly round camp in company with the ever-present moose-birds or whiskey-jacks. There were

many grouse in the woods, of three kinds—blue, spruce, and ruffed—and these varied our diet and also furnished us with some sport with our rifles, as we always shot them in rivalry. That is, each would take a shot in turn, aiming at the head of the bird, as it perched motionless on the limb of a tree or stopped for a second while running along the ground; then if he missed or hit the bird anywhere but in the head, the other scored one and took the shot. The resulting tally was a good test of comparative skill; and rivalry always tends to keep a man's shooting up to the mark.

Once or twice, when we had slain deer, we watched by the carcasses, hoping that they would attract a bear, or perhaps one of the huge timber-wolves whose mournful, sinister howling we heard each night. But there were no bears in the valley; and the wolves, those cruel, crafty beasts, were far too cunning to come to the bait while we were there. We saw nothing but crowds of ravens, whose hoarse barking and croaking filled the air as they circled around overhead, lighted in the trees, or quarrelled over the carcass. Yet although we saw no game it was very pleasant to sit out, on the still evenings, among the tall pines or on the edge of a great gorge, until the afterglow of the sunset was dispelled by the beams of the frosty moon. Now and again the hush would be suddenly broken by the long howling of a wolf, that echoed and rang under the hollow woods and through the deep chasms until they resounded again, while it made our hearts bound and the blood leap in our veins. Then there would be silence once more, broken only by the rush of the river and the low moaning and creaking of the pines; or the strange calling of the owls might be answered by the far-off, unearthly laughter of a loon, its voice carried through the

stillness a marvellous distance from the little lake on which it was swimming.

One day, after much toilsome and in places almost dangerous work, we climbed to the very top of the nearest mountain chain, and from it looked out over a limitless, billowy field of snow-capped ranges. Up above the timber-line were snow-grouse and huge, hoary-white woodchucks, but no trace of the game we were after; for, rather to our surprise, the few goat signs that we saw were in the timber. I did not catch another glimpse of the animals themselves until my holiday was almost over and we were preparing to break camp. Then I saw two. I had spent a most laborious day on the mountain as usual, following the goat paths, which were well-trodden trails leading up the most inaccessible places; certainly the white goats are marvellous climbers, doing it all by main strength and perfect command over their muscles, for they are heavy, clumsy-seeming animals, the reverse of graceful and utterly without any look of light agility. As usual, toward evening I was pretty well tired out, for it would be difficult to imagine harder work than to clamber unendingly up and down the huge cliffs. I came down along a great jutting spur, broken by a series of precipices, with flat terraces at their feet, the terraces being covered with trees and bushes, and running, with many breaks and interruptions, parallel to each other across the face of the mountains. On one of these terraces was a space of hard clay ground beaten perfectly bare of vegetation by the hoofs of the goats, and, in the middle, a hole, two or three feet in width, that was evidently in the spring used as a lick. Most of the tracks were old, but there was one trail coming diagonally down the side of the mountain on which there were

two or three that were very fresh. It was getting late, so I did not stay long, but continued the descent. The terrace on which the lick was situated lay but a few hundred yards above the valley, and then came a level, marshy plain a quarter of a mile broad, between the base of the mountain and the woods. Leading down to this plain was another old goat trail, which went to a small, boggy pool which the goats must certainly have often visited in the spring; but it was then unused.

When I reached the farther side of the plain and was about entering the woods, I turned to look over the mountain once more, and my eye was immediately caught by two white objects which were moving along the terrace, about half a mile to one side of the lick. That they were goats was evident at a glance, their white bodies contrasting sharply with the green vegetation. They came along very rapidly, giving me no time to get back over the plain, and stopped for a short time at the lick, right in sight from where I was, although too far off for me to tell anything about their size. I think they smelt my footprints in the soil; at any rate they were very watchful, one of them always jumping up on a rock or fallen log to mount guard when the other halted to browse. The sun had just set; it was impossible to advance across the open plain, which they scanned at every glance; and to skirt it and climb up any other place than the pass down which I had come —itself a goat trail—would have taken till long after nightfall. All that I could do was to stay where I was and watch them, until in the dark I slipped off unobserved and made the best of my way to camp, resolved to hunt them up on the morrow.

Shortly after noon next day we were at the terrace, having approached with the greatest caution, and only

after a minute examination, with the field-glasses, of all the neighboring mountain. I wore moccasins, so as to make no noise. We soon found that one of the trails was evidently regularly travelled, probably every evening, and we determined to lie in wait by it, so as either to catch the animals as they came down to feed or else to mark them if they got out on some open spot on the terraces where they could be stalked. As an ambush we chose a ledge in the cliff below a terrace, with, in front, a breastwork of the natural rock some five feet high. It was perhaps fifty yards from the trail. I hid myself on this ledge, having arranged on the rock breastwork a few pine branches through which to fire, and waited, hour after hour, continually scanning the mountain carefully with the glasses. There was very little life. Occasionally a chickaree or chipmunk scurried out from among the trunks of the great pines to pick up the cones which he had previously bitten off from the upper branches; a noisy Clarke's crow clung for some time in the top of a hemlock; and occasionally flocks of crossbill went by, with swift, undulating flight and low calls. From time to time I peeped cautiously over the pine branches on the breastwork; and the last time I did this I suddenly saw two goats, that had come noiselessly down, standing motionless directly opposite to me, their suspicions evidently aroused by something. I gently shoved the rifle over one of the boughs; the larger goat turned its head sharply round to look, as it stood quartering to me, and the bullet went fairly through the lungs. Both animals promptly ran off along the terrace, and I raced after them in my moccasins, skirting the edge of the cliff, where there were no trees or bushes. As I made no noise and could run very swiftly on the bare cliff edge, I succeeded in coming

out into the first little glade, or break, in the terrace at the same time that the goats did. The first to come out of the bushes was the big one I had shot at, an old she, as it turned out; while the other, a yearling ram, followed. The big one turned to look at me as she mounted a fallen tree that lay across a chasm-like rent in the terrace; the light-red frothy blood covered her muzzle, and I paid no further heed to her as she slowly walked along the log, but bent my attention toward the yearling, which was galloping and scrambling up an almost perpendicular path that led across the face of the cliff above. Holding my rifle just over it, I fired, breaking the neck of the goat, and it rolled down some fifty or sixty yards, almost to where I stood. I then went after the old goat, which had lain down; as I approached she feebly tried to rise and show fight, but her strength was spent, her blood had ebbed away, and she fell back lifeless in the effort. They were both good specimens, the old one being unusually large, with fine horns. White goats are squat, heavy beasts; not so tall as blacktail deer, but weighing more.

Early next morning I came back with my two men to where the goats were lying, taking along the camera. Having taken their photographs and skinned them we went back to camp, hunted up the ponies and mules, who had been shifting for themselves during the past few days, packed up our tent, trophies, and other belongings, and set off for the settlements, well pleased with our trip.

All mountain game yields noble sport, because of the nerve, daring, and physical hardihood implied in its successful pursuit. The chase of the white goat involves extraordinary toil and some slight danger on account of the extreme roughness and inaccessibility of

its haunts; but the beast itself is less shy than the mountain-sheep. How the chase of either compares in difficulty with that of the various Old World mountain game it would be hard to say. Men who have tried both say that, though there is not in Europe the chance to try the adventurous, wandering life of the wilderness so beloved by the American hunter, yet when it comes to comparing the actual chase of the game of the two worlds, it needs greater skill, both as cragsman and still-hunter, to kill ibex and chamois in the Alps or Pyrenees—by fair stalking I mean; for if they are driven to the guns, as is sometimes done, the sport is of a very inferior kind, not rising above the methods of killing whitetail in the Eastern States, or of driving deer in Scotland. I myself have had no experience of Old World mountaineering, beyond two perfectly conventional trips up the Matterhorn and Jungfrau—on the latter, by the way, I saw three chamois a long way off.

My brother has done a good deal of ibex, mountain-sheep, and markhoor shooting in Cashmere and Thibet, and I suppose the sport to be had among the tremendous mountain masses of the Himalayas must stand above all other kinds of hill shooting; yet, after all, it is hard to believe that it can yield much more pleasure than that felt by the American hunter when he follows the lordly elk and the grizzly among the timbered slopes of the Rockies, or the bighorn and the white-fleeced, jet-horned antelope goat over their towering and barren peaks.

APPENDIXES

APPENDIX A

NOTES ON FLORIDA TURTLES *

During the last week of March, 1917, I spent a few days near Punta Gorda, Fla., on a trip after devil-fish, being the guest of Mr. Russell J. Coles, whose piece on devil-fish in the *American Museum Journal* † was the very best thing of its kind that has ever been written.

One day we visited an island which, while I was President, was made into a bird reserve ‡ on the initiative of the Audubon Society. We forced our way through the thick belt of mangroves which fringed the island to the smaller area of higher land inside, on which grew Florida figs, papaws, and one or two other kinds of tropical trees. Here to our surprise we came across a burrow. I had no idea what creature had made it, but Captain Jack McCann, a native Florida fisherman who was with us, at once said it was the burrow of a gopher. My book knowledge enabled me to realize that he was speaking, not of the burrowing pouched rat—which in Florida is rather absurdly called "salamander"—but of a big land-tortoise. The burrow was shallow and we speedily dug out the occupant. It was a fairly large specimen, weighing eleven and one-half

* Written in camp near Punta Gorda on the Gulf of Mexico, *American Museum Journal*, May, 1917.

† *American Museum Journal*, Vol. XVI, No. 4.

‡ One of several small islands in Charlotte Harbor established as government reservations during Roosevelt's administration. The first federal bird reservation in the United States was made by Roosevelt through his authority as President. Somewhat later a law was passed by Congress vesting in the President power to set aside government lands as bird reserves. No less than fifty-one such reservations were established during Roosevelt's tenure of office, covering many parts of the United States from Florida to Oregon.

pounds, with a shell thirteen and one-half inches long, nine inches wide, and five and one-fourth inches deep.* (Later we secured a small specimen on Captiva Island, which weighed four and three-fourths pounds, was eight and one-half inches long, six inches wide, and three and one-half inches deep.) How this big tortoise got to the island is something of a mystery, as the species is entirely terrestrial; it must have been drifted out by some accident of flood or storm.

The gopher-tortoise is a vegetable feeder and its flesh is good eating. We found the meat delicious. Unlike our common box-tortoise the plastron is not hinged, but when alarmed the creature draws in the head completely out of sight, and tucks back the feet so that only the rough, flat, scaly surfaces are exposed. The turtle is then practically immune from attack. I was much interested to be told by Captain McCann that he had once found a diamond-back rattlesnake with a small specimen of this species of tortoise inside of him. Captain McCann is an accurate and trustworthy observer. I had supposed that rattlesnakes fed exclusively on birds and mammals.

In the fringe of mangrove swamp on the island we got three small diamond-back terrapin of the Gulf variety.

Out in the bay we once or twice saw loggerhead turtles. Mr. Coles and the professional fishermen who were with us related many instances of attacks they had witnessed by sharks on full-grown sea-turtles, both the loggerhead and the green turtle. I knew that sharks gulped down small turtles whenever they met

* The gopher-tortoise (*Testudo polyphemus*) has been known to attain a length of eighteen inches, although the average size is probably in the neighborhood of one foot.

them, but I had not realized that they attacked the big ones. My companions, however, assured me that nearly half of the full-grown turtles which they had caught showed signs of having been attacked at one time or another by sharks. Usually this meant that one flipper was gone. In one case the turtle had lost two flippers, obviously at different times. On one occasion Captain Jack was attracted by a great commotion in the water and sailed toward the scene. He found a very large shark with a huge loggerhead turtle in his mouth, the turtle frantically waving all four legs while the shark shook its head in the effort to get its teeth through the shell. The final outcome he was not able to observe. Mr. Coles said that on several occasions he had seen sharks attack these big turtles. The turtle would raise itself out of the water and splash with all four flippers, frightening off the shark for a moment; but sooner or later the turtle would attempt to escape by diving, and then the shark, ordinarily, would seize it from behind, shearing off one flipper, and sometimes leaving a semicircular mark on the shell itself.

On one occasion Mr. Coles saw a great shark, which he provisionally identified as a white shark, attack and seize a big loggerhead turtle, disappearing with it. Next day he found the damaged turtle on the surface of the water unable to dive, and harpooned it. He found a semicircle twenty-four inches across and twelve inches deep, torn out of the two shells on one side of the turtle, which gives a good idea of the width and depth of the shark's bite.

The strength of the gopher-tortoise we captured was great. If I stood on it, it would start to walk off with me, not seeming to be bothered by the weight.

APPENDIX B

MY LIFE AS A NATURALIST *

I AM asked to give an account of my interest in natural history, and my experience as an amateur naturalist. The former has always been very real; and the latter, unfortunately, very limited.

I don't suppose that most men can tell why their minds are attracted to certain studies any more than why their tastes are attracted by certain fruits. Certainly, I can no more explain why I like "natural history" than why I like California canned peaches; nor why I do not care for that enormous brand of natural history which deals with invertebrates any more than why I do not care for brandied peaches. All I can say is that almost as soon as I began to read at all I began to like to read about the natural history of beasts and birds and the more formidable or interesting reptiles and fishes.

The fact that I speak of "natural history" instead of "biology," and use the former expression in a restricted sense, will show that I am a belated member of the generation that regarded Audubon with veneration, that accepted Waterton—Audubon's violent critic —as the ideal of the wandering naturalist, and that looked upon Brehm as a delightful but rather awesomely erudite example of advanced scientific thought. In the broader field, thank Heaven, I sat at the feet of Darwin and Huxley; and studied the large volumes in which Marsh's and Leidy's palæontological studies were embalmed, with a devotion that was usually attended

* *American Museum Journal*, May, 1918.

by a dreary lack of reward—what would I not have given fifty years ago for a writer like Henry Fairfield Osborn, for some scientist who realized that intelligent laymen need a guide capable of building before their eyes the life that was, instead of merely cataloguing the fragments of the death that is.

I was a very near-sighted small boy, and did not even know that my eyes were not normal until I was fourteen; and so my field studies up to that period were even more worthless than those of the average boy who "collects" natural-history specimens much as he collects stamps. I studied books industriously but nature only so far as could be compassed by a mole-like vision; my triumphs consisted in such things as bringing home and raising—by the aid of milk and a syringe—a family of very young gray squirrels, in fruitlessly endeavoring to tame an excessively unamiable woodchuck, and in making friends with a gentle, pretty, trustful white-footed mouse which reared her family in an empty flower-pot. In order to attract my attention birds had to be as conspicuous as bobolinks or else had to perform feats such as I remember the barn-swallows of my neighborhood once performed, when they assembled for the migration alongside our house and because of some freak of bewilderment swarmed in through the windows and clung helplessly to the curtains, the furniture, and even to our clothes.

Just before my fourteenth birthday my father—then a trustee of the American Museum of Natural History—started me on my rather moth-like career as a naturalist by giving me a pair of spectacles, a French pin-fire double-barrelled shotgun—and lessons in stuffing birds. The spectacles literally opened a new world to me. The mechanism of the pin-fire gun was without

springs and therefore could not get out of order—an important point, as my mechanical ability was nil. The lessons in stuffing and mounting birds were given me by Mr. John G. Bell, a professional taxidermist and collector who had accompanied Audubon on his trip to the then "far West." Mr. Bell was a very interesting man, an American of the before-the-war type. He was tall, straight as an Indian, with white hair and smooth-shaven, clear-cut face; a dignified figure, always in a black frock coat. He had no scientific knowledge of birds or mammals; his interest lay merely in collecting and preparing them. He taught me as much as my limitations would allow of the art of preparing specimens for scientific use and of mounting them. Some examples of my wooden methods of mounting birds are now in the American Museum: three different species of Egyptian plover, a snowy owl, and a couple of spruce-grouse mounted on a shield with a passenger-pigeon—the three latter killed in Maine during my college vacations.

With my spectacles, my pin-fire gun, and my clumsy industry in skinning "specimens," I passed the winter of '72–73 in Egypt and Palestine, being then fourteen years old. My collections showed nothing but enthusiasm on my part. I got no bird of any unusual scientific value. My observations were as valueless as my collections save on just one small point; and this point is of interest only as showing, not my own power of observation, but the ability of good men to fail to observe or record the seemingly self-evident.

On the Nile the only book dealing with Egyptian birds which I had with me was one by an English clergyman, a Mr. Smith, who at the end of his second volume gave a short list of the species he had shot, with

some comments on their habits but without descriptions. On my way home through Europe I secured a good book of Egyptian ornithology by a Captain Shelley. Both books enumerated and commented on several species of chats—the Old World chats, of course, which have nothing in common with our queer warbler of the same name. Two of these chats were common along the edges of the desert. One species was a boldly pied black-and-white bird, the other was colored above much like the desert sand, so that when it crouched it was hard to see. I found that the strikingly conspicuous chat never tried to hide, was very much on the alert, and was sure to attract attention when a long way off; whereas the chat whose upper color harmonized with its surroundings usually sought to escape observation by crouching motionless. These facts were obvious even to a dull-sighted, not particularly observant, boy; they were essential features in the comparison between and in the study of the life histories of the two birds. Yet neither of the two books in my possession so much as hinted at them.

I think it was my observation of these, and a few similar facts, which prevented my yielding to the craze that fifteen or twenty years ago became an obsession with certain otherwise good men—the belief that all animals were protectively colored when in their natural surroundings. That this simply wasn't true was shown by a moment's thought of these two chats; no rational man could doubt that one was revealingly and the other concealingly colored; and each was an example of what was true in thousands of other cases. Moreover, the incident showed the only, and very mild, merit which I ever developed as a "faunal naturalist." I never grew to have keen powers of observation. But

whatever I did see I saw truly, and I was fairly apt to understand what it meant. In other words, I saw what was sufficiently obvious, and in such case did not usually misinterpret what I had seen. Certainly this does not entitle me to any particular credit, but the outstanding thing is that it does entitle me to some, even although of a negative kind; for the great majority of observers seem quite unable to see, to record, or to understand facts so obvious that they leap to the eye. My two ornithologists offered a case in point as regards the chats; and I shall shortly speak of one or two other cases, as, for example, the cougar and the saddle-backed lechwi.

After returning to this country and until I was halfway through college, I continued to observe and collect in the fashion of the ordinary boy who is interested in natural history. I made copious and valueless notes. As I said above, I did not see and observe very keenly; later it interested and rather chagrined me to find out how much more C. Hart Merriam and John Burroughs saw when I went out with them near Washington or in the Yellowstone Park; or how much more George K. Cherrie and Leo E. Miller and Edmund Heller and Edgar A. Mearns and my own son Kermit saw in Africa and South America, on the trips I took to the Nyanza lakes and across the Brazilian hinterland.

During the years when as a boy I "collected specimens" at Oyster Bay or in the north woods, my contributions to original research were of minimum worth —they were limited to occasional records of such birds as the dominica warbler at Oyster Bay, or to seeing a duck-hawk work havoc in a loose gang of night-herons, or to noting the bloodthirsty conduct of a captive mole-shrew—I think I sent an account of the last incident to

C. Hart Merriam. I occasionally sent to some small ornithological publication a local list of Adirondack birds or something of the sort; and then proudly kept reprinted copies of the list on my desk until they grew dog-eared and then disappeared. I lived in a region zoologically so well known that the obvious facts had all been set forth already, and as I lacked the power to find out the things that were not obvious, my work merely paralleled the similar work of hundreds of other young collectors who had a very good time but who made no particular addition to the sum of human knowledge.

Among my boy friends who cared for ornithology was a fine and manly young fellow, Fred Osborn, the brother of Henry Fairfield Osborn. He was drowned, in his gallant youth, forty years ago; but he comes as vividly before my eyes now as if he were still alive. One cold and snowy winter I spent a day with him at his father's house at Garrison-on-the-Hudson. Numerous northern birds, which in our eyes were notable rarities, had come down with the hard weather. I spied a flock of crossbills in a pine, fired, and excitedly rushed forward. A twig caught my spectacles and snapped them I knew not where. But dim though my vision was, I could still make out the red birds lying on the snow; and to me they were treasures of such importance that I abandoned all thought of my glasses and began a near-sighted hunt for my quarry. By the time I had picked up the last crossbill I found that I had lost all trace of my glasses; my day's sport—or scientific endeavor, whatever you choose to call it—came to an abrupt end; and as a result of the lesson I never again in my life went out shooting, whether after sparrows or elephants, without a spare pair of spectacles in my

pocket. After some ranch experiences I had my spectacle-cases made of steel; and it was one of these steel spectacle-cases which saved my life in after-years when a man shot into me in Milwaukee.

While in Harvard I was among those who joined in forming the Nuttall Club, which I believe afterward became one of the parent sources of the American Ornithologists' Union.

The Harvard of that day was passing through a phase of biological study which was shaped by the belief that German university methods were the only ones worthy of copy, and also by the proper admiration for the younger Agassiz, whose interest was mainly in the lower forms of marine life. Accordingly it was the accepted doctrine that a biologist—the word "naturalist" was eschewed as archaic—was to work toward the ideal of becoming a section-cutter of tissue, who spent his time studying this tissue, and low marine organisms, under the microscope. Such work was excellent; but it covered a very small part of the biological field; and not only was there no encouragement for the work of the field naturalist, the faunal naturalist, but this work was positively discouraged, and was treated as of negligible value. The effect of this attitude, common at that time to all our colleges, was detrimental to one very important side of natural-history research. The admirable work of the microscopist had no attraction for me, nor was I fitted for it; I grew even more interested in other forms of work than in the work of a faunal naturalist; and I abandoned all thought of making the study of my science my life interest.

But I never lost a real interest in natural history; and I very keenly regret that at certain times I did not display this interest in more practical fashion. Thus,

for the dozen years beginning with 1883, I spent much of my time on the Little Missouri, where big game was then plentiful. Most big-game hunters never learn anything about the game except how to kill it; and most naturalists never observe it at all. Therefore a large amount of important and rather obvious facts remains unobserved or inaccurately observed until the species becomes extinct. What is most needed is not the ability to see what very few people can see, but to see what almost anybody can see but nobody takes the trouble to look at. But I vaguely supposed that the obvious facts were known; and I let most of the opportunities pass by. Even so, many of my observations on the life histories of the bighorns, white goats, prongbucks, deer, and wapiti, and occasional observations on some of the other beasts, such as black-footed ferrets, were of value; indeed, as regards some of the big-game beasts, the accounts in "Hunting Trips of a Ranchman," "Ranch Life and the Hunting Trail," and "The Wilderness Hunter" gave a good deal of information which, as far as I know, is not to be found elsewhere.

To illustrate what I mean as "obvious" facts which nevertheless are of real value I shall instance the cougar. In the winter of 1910 I made a cougar-hunt with hounds, spending about five weeks in the mountains of northwestern Colorado. At that time the cougar had been seemingly well known to hunters, settlers, naturalists, and novelists for more than a century; and yet it was actually impossible to get trustworthy testimony on such elementary points as, for instance, whether the male and female mated permanently, or at least until the young were reared (like foxes and wolves), and whether the animal caught its prey by rambling and

stalking or, as was frequently asserted, by lying in wait on the branches of a tree. The facts I saw and observed during our five weeks' hunt in the snow were obvious; they needed only the simplest powers of observation and of deduction from observation. But nobody had hitherto shown or exercised these simple powers! My narrative in the volume "Outdoor Pastimes of an American Hunter" gave the first reasonably full and trustworthy life history of the cougar as regards its most essential details—for Merriam's capital Adirondack study had dealt with the species when it was too near the vanishing-point and therefore when the conditions were too abnormal for some of these essential details to be observed.

In South America I made observations of a certain value on some of the strange creatures we met, and these are to be found in the volume "Through the Brazilian Wilderness"; but the trip was primarily one of exploration. In Africa, however, we really did some good work in natural history. Many of my observations were set forth in my book "African Game Trails"; and I have always felt that the book which Edmund Heller and I jointly wrote, the "Life Histories of African Game Animals," was a serious and worth-while contribution to science. Here again, this contribution, so far as I was concerned, consisted chiefly in seeing, recording, and interpreting facts which were really obvious, but to which observers hitherto had been blind, or which they had misinterpreted partly because sportsmen seemed incapable of seeing anything except as a trophy, partly because stay-at-home systematists never saw anything at all except skins and skulls which enabled them to give Latin names to new "species" or "sub-species," partly because collectors

had collected birds and beasts in precisely the spirit in which other collectors assembled postage-stamps.

I shall give a few instances. In mid-Africa we came across a peculiar bat, with a greenish body and slate-blue wings. Specimens of this bat had often been collected. But I could find no record of its really interesting habits. It was not nocturnal; it was hardly even crepuscular. It hung from the twigs of trees during the day and its activities began rather early in the afternoon. It did not fly continuously in swallow fashion, according to the usual bat custom. It behaved like a phœbe or other flycatcher. It hung from a twig until it saw an insect, then swooped down, caught the insect, and at once returned to the same or another twig—just as a phœbe or peewee or king-bird returns to its perch after a similar flight.

On the White Nile I hunted a kind of handsome river antelope, the white-withered or saddle-backed lechwi. It had been known for fifty years to trophy-seeking sportsmen, and to closet naturalists, some of whom had called it a kob and others a water-buck. Its nearest kinsman was in reality the ordinary lechwi, which dwelt far off to the south, along the Zambezi. But during that half-century no hunter or closet naturalist had grasped this obvious fact. I had never seen the Zambezi lechwi, but I had carefully read the account of its habits by Selous—a real hunter-naturalist, faunal naturalist. As soon as I came across the White Nile river bucks and observed their habits, I said to my companions that they were undoubtedly lechwis; I wrote this to Selous, and to another English hunter-naturalist, Migand; and even a slight examination of the heads and skins when compared with those of the other lechwi and of the kobs and water-bucks proved that I was right.

A larger, but equally obvious group of facts was that connected with concealing and revealing coloration. As eminent a naturalist as Wallace, and innumerable men of less note, had indulged in every conceivable vagary of speculative theory on the subject, largely based on supposed correlation between the habits and the shape or color patterns of big animals which, as a matter of fact, they had never seen in a state of nature. While in Africa I studied the question in the field, observing countless individuals of big beasts and birds, and comparing the results with what I had observed of the big game and the birds of North America (the result being borne out by what I later observed in South America). In a special chapter of the "Life Histories of African Game Animals," as well as in a special number of the *American Museum Bulletin*,* I set forth the facts thus observed and the conclusions inevitably to be deduced from them. All that I thus set forth, and all the conclusions I deduced, belonged to the obvious; but that there was need of thus setting forth the obvious was sufficiently shown by the simple fact that large numbers of persons refused to accept it even when set forth.

I do not think there is much else for me to say about my anything but important work as a naturalist. But perhaps I may say further that while my interest in natural history has added very little to my sum of achievement, it has added immeasurably to my sum of enjoyment in life.

* "Revealing and Concealing Coloration in Birds and Mammals," *Bulletin of the American Museum of Natural History*, Vol. XXX, Art. VIII, pp. 119–231, August, 1911.

APPENDIX C

THE frontispiece* I owe to the courtesy of Mr. Theodore Pitman, a fellow Harvard student of Archie's, whom we met on Buckskin Mountain; being both a hunter and a lover of the picturesque, he was as much impressed as we were by the scene when a cougar stood in a pine, with the Grand Canyon as a background. The photograph* at the end of the book is by Doctor Alexander Lambert, and the tail-piece is from a photograph by him.

I had been told by old hunters that black bears would sometimes attack moose calves, and in one instance, in the Rockies, my informant described to me how a big grizzly, but a few weeks out of its den in spring, attacked and slew full-grown moose. I was not surprised at the latter statement, having myself come across cattle-killing grizzlies; but I wondered at a black bear, which is not much of a beast of prey, venturing to meddle with the young of so formidable a fighter as a moose. However, it is true. Recently my nephew Hall Roosevelt, who was working at Dawson City, went on a moose-hunt in the valley of the Yukon. One night a moose cow passed by the camp, having first swum a stream in front of the camp. She was followed at some little distance by a calf. The latter halted near the camp. Suddenly a black bear, with a tremendous crashing of branches, came with a rush through the bushes, and seized the calf; although it was driven off, it had with its teeth so injured the spine of the calf that they were obliged to shoot the latter.

On a hunt in the Northern Rockies, Archie met a

*This refers to the earlier edition. [Ed.]

man who had two dogs, an ordinary track-hound and a Russian wolfhound. One day they came across a white goat, and before the slow creature could reach the precipice the dogs overtook and bayed it. The track-hound merely jumped to and fro, baying; but the wolfhound rushed straight in and caught the goat by the neck on one side; whereupon the track-hound seized the other side of the neck. Immediately, with two wicked backward thrusts of its horns, first to one side, then to the other, the goat killed both its assailants; the stiletto-like horns were driven to the hilt with a single jab.

The attack by the moose upon us, mentioned in the final chapter, was so unusual that I give the deposition of the two guides who were with me, and also the report of the senior of the two, the game-warden, in reference to the occurrence. They are as follows:

CANADA
PROVINCE OF QUEBEC,
DISTRICT OF QUEBEC,

I, Theodore Roosevelt, residing at Oyster-Bay in the United States of America, do solemnly declare as follows:

That I have just returned from a trip in the Tourilli Club limits as a Guest of Dr. Alexander Lambert, I had the ordinary game license No. 25 issued to me on the 6th day of september instant. On september the nineteenth, on Lake Croche, having with me as guides, Arthur Lirette and Odilon Genest, I killed an old bull moose as authorized by the license, which only permitted to me to kill one moose. That afternoon, shortly after three o'clock, we were returning in our canoe to the West end of the Lake, where a portage trail led to our camp; a small stream runs besides the portage trail; when half a mile from our proposed landing-place, we saw an old bull moose on the shore. We paddled up to within a hundred yards of it. We supposed that when it saw us, it would take to the woods. It however walked

along the edge of the water parallel to our canoe, looking at us. We passed it, and gave it our wind, thinking this would surely cause it to run. But it merely raised its hair on its withers and shook its horns and followed after the canoe. We shouted, but it paid no heed to us; we then reversed our canoe and paddled in the opposite direction; but following us and threatening us, the bull moose turned and walked the same way we did, we renewed our former course, and thereupon so did the moose, where the water was shallow, we did not venture near it, but where the water was deep, we went within fifty yards; and it then thrashed the branches of a young tree with its antlers, and pawed the earth and advanced a little way into the water towards us, walking parallel to our canoe, it reached the portage trail, it turned and walked up this trail and sniffed at our morning's tracks, and we supposed it had fled; but on nearing the landing-place, we saw it standing in the trail, and it rushed down towards us and we had to back quickly into deep water; we paddled on round the shore, hoping it would get tired and go; we shouted and tried to frighten it, but it merely shook its head and stamped on the ground and bounded in a circle; then it swaggered along grunting, it kept its mouth open, and lolled out its tongue and when it turned towards us, it ran its tongue over its muzzle, thus it accompanied us to and for an hour, cutting us off whenever we tried to land; then it turned, and went up the little stream, shaking its head, and galloping or bounding not trotting, for fifty yards, it disappeared around a bend of a stream, we waited a few minutes, and landed, and started along the portage trail for camp, after about ten minutes, the trail approached the little stream; then the moose suddenly appeared rushing towards us at a slashing trot, its hair ruffled and tossing his head.

Arthur Lirette, who is one of the game wardens of the Tourilli Club, called out to me to shoot, or the moose would do us mischief, in a last effort to frighten it, I fired over its head, but it paid no heed to this and rushed over the stream at us; Arthur again called: "Tirez, monsieur, tirez, vite, vite, vite," and I fired into the moose's chest, when he was

less than twenty feet away, coming full tilt at us, grunting, shaking his head, his ears back and his hair brindled; the shot stopped him; I fired into him again; both shots were fatal; he recrossed the little stream and fell to a third shot; but when we approached, he rose, grunting and started towards us. I killed him. If I had not stopped him, he would have certainly killed one or more of our party; and at twenty feet I had to shoot as straight as I knew how, or he would have reached us. I had done everything possible in my power to scare him away for an hour and a quarter, and I solemnly declare that I killed him only when it was imperatively necessary, in order to prevent the loss of one or more of our own lives, and I make this solemn declaration conscientiously, believing it to be true, and knowing that it is of the same force and effect as if made under oath, and by virtue of the Canada EVIDENCE ACT, 1893.

(*Signed*) THEODORE ROOSEVELT.

Declared before me, this 24th day of september 1915.

(*Signed*) E. A. PANET, *N. P. & J. P.*

TRUE COPY,

S. DUFAULT

Deputy-Minister, Department Colonization, Mines and Fisheries, Quebec.

CANADA,
PROVINCE DE QUEBEC,
DISTRICT DE QUEBEC.

Je, Arthur Lirette, du village de St-Raymond, gardien du Club de Pêche et de Chasse Tourilli, et Je, Odilon Genest, du même lieu, en ma qualité de guide, déclare sollennellement que les faits relatés ci-hauts par la déclaration de M. Théodore Roosevelt, laquelle nous a été lue et traduite en francais par le Notaire E. A. Panet, de St-Raymond, que cette déclaration contient la vérité dans toute son étendue, et que si le dit Th. Roosevelt n'avait pas tué l'orignal mentionné par lui, que nos vies étaient en danger.

Et je fais cette déclaration solennelle consciencieusement la croyant vraie, et sachant qu'elle a la même force et l'effet, comme si elle avait été faite sous serment, en vertu de "The CANADA EVIDENCE ACT, 1893."

Déclaré devant moi, à St-Raymond, ce 24ème jour de septembre, 1915.

(*Signe*) ARTHUR LIRETTE
" ODILON GENEST,
" E. A. PANET, *N. P. & J. Paix.*

VRAIE COPIE,

S. DUFAULT
Sous-Ministre, Département de la Colonisation, des Mines et des Pêcheries, Québec.

COPY

ST. RAYMOND, 7 Octobre 1915

Cher Messieur

Rapport

Le 19 Septembre 1915 Mons. Col. Teodore Rosevelt partant pour faire la chasse a l'orignal dans le club Tourilli accompagne d'Arthur Lirette et Odilion Genest comme guides vers 9 heures du matin au lac Croche du Bras du Nord le Col Rosevelt tua un original dans l'apres midi voulant sen revenir du camp du lac a l'ile avec la tete et le panage dans le canot vers les 3 heures ½ nous apercumes un autre original sur le bord du lac nous avons arreter notre canot nous l'avons regarder et l'orignal nous regardait bien ferocement nous etions a peu pres un arpent de distance l'on se mit a ramer pour aller au portage du lac a l'ile et l'animal se mis a suive sur la meme directions de nous nous avons retourner sur nos pas une couple d'arpent et l'orignal fit la meme chose et l'on pouvait voir qu'il etait bien enrager alors l'on se mit a crier et frapper sur le canot avec les avirons afin de pouvoir l'effayer au contraire il se mit a corné les arbres du bord du lac avec le poil bien droit sur le dos et il grattait avec ses pattes dans la terre ensuite il a pris le portage nous avons rester pour 10 minute ensuit nous avon ramer pour se rendre au portage le pensant disparu mais

l'on ne pu se rendre que l'animal revenait de nouveau sur nous avons reculer de nouveau sur le lac et l'orignal est rendu dans l'eau jusquau genoux ensuite se mit de galopper et sauter et a traverser la petite Riviere et se mit a piocher et Beugler et se battre avec les arbres il a rester 5 minutes a peu pres et nous avons essayer a rapprocher encore sur terre mais imposible car l'animal est revenus de nouveau sur le bord du lac faire la meme chose ensuite il pris la petite Riviere en trottant a peu pres 200 pieds et il disparu nous avons laisser faire pour quelques instant ensuite nous avons approcher sur terre au petit portage cela faisait que n'on avait eté gardé par cet animal pour une heure a une heure ½ ensuite j'ai dis a Monsier et Odilion que l'on faisait mieux de se suivre et mener autant de bruit possible afin de l'effrayer mais l'orseque n'on eut fait deux arpents dans le portage j'ai apercus l'animal qui semblait nous attendre dans le petit ruisseau et la voyant qu'il y avait bien du danger pour nous tous nous etions a une distance le 30 verges de lui j'ai avertit Monsier de tirer et Mons. a pris sa carabine et a tirer en l'air afin de lui faire bien peur et de pouvoir le chasser mais au contraire en entendant le coup du fusil il foncé sur nous j'ai dit a Monsieur Col. tirer bien vite et il a tiré de nouveau l'animal qui etait a 18 pieds de nous a peu pres et il la blessé a mort il a fait deux sault en s'eloignant de nous mais il s'est retourner encore sur nous et j'ai dis au Colonel de tiré afin de le mettre à terre cela faisait une heure et demi que cet animal nous gardait.

ARTHUR LIRETTE,
Gardien.

APPENDIX D

On the initiative of the Audubon Society the national government, when I was President, began the work of creating and policing bird refuges by establishing the following refuges:

March 14, 1903. Pelican Island Reservation. Pelican Island in Indian River, Florida.

October 4, 1904. Breton Island Reservation. Breton, Old Harbor, and Free Mason Islands, Louisiana.

March 9, 1905. Stump Lake Reservation. Stump Lake in North Dakota.

October 10, 1905. Siskiwit Islands Reservation. Unsurveyed islands of the Siskiwit group on the south side of Isle Royal in Lake Superior, Michigan.

October 10, 1905. Huron Islands Reservation. Unsurveyed islands of the Huron Islands group, Lake Superior, Michigan.

October 10, 1905. Passage Key Reservation. An island near the mouth of Tampa Bay, Florida.

February 10, 1906. Indian Key Reservation. An island in Tampa Bay, Florida.

August 8, 1907. Tern Islands Reservation. All the small islets commonly called mud lumps in or near the mouths of the Mississippi River, Louisiana.

August 17, 1907. Shell Keys Reservation. Unsurveyed islets in the Gulf of Mexico about three and one-half miles south of Marsh Island, Louisiana.

October 14, 1907. Three Arch Rocks Reservation. Unsurveyed islands known as Three Arch Rocks in the Pacific Ocean off the coast of Oregon.

October 23, 1907. Flattery Rocks Reservation. Islands lying off the coast of Washington.

October 23, 1907. Copalis Rock Reservation. Islands lying off the coast of the State of Washington in the Pacific Ocean.

October 23, 1907. Quillayute Needles Reservation. Islands lying off the coast of Washington in the Pacific Ocean.

December 7, 1907. East Timbalier Island Reservation. Small, marshy islands commonly known as East Timbalier Island in the Gulf of Mexico, south of Louisiana.

February 24, 1908. Mosquito Inlet Reservation. Small mangrove and salt-grass islets, shoals, sand-bars, and sand spits in and near the mouths of the Halifax and Hillsboro Rivers, Florida.

April 6, 1908. Tortugas Keys Reservation. Group known as Dry Tortugas in the Gulf of Mexico, south of Florida.

August 8, 1908. Key West Reservation. Keys and islands of the Florida Keys group near Key West, Florida.

August 8, 1908. Klamath Lake Reservation. Islands situated in Lower Klamath Lake and the marsh and swamplands unsuitable for agricultural purposes in townships thirty-nine, forty, and forty-one south, Oregon, and in townships forty-seven and forty-eight north, California.

August 18, 1908. Lake Malheur Reservation. Shore lines of Lakes Malheur and Harney and the streams and waters connecting these lakes, Oregon.

August 28, 1908. Chase Lake Reservation. Public lands about Chase Lake, North Dakota.

September 15, 1908. Pine Island Reservation. Bird Island and Middle Island in Pine Island Sound on the west coast of Florida.

September 26, 1908. Matlacha Pass Reservation. Three small islands located in Matlacha Pass, west coast of Florida.

September 26, 1908. Palma Sola Reservation. Small, unsurveyed island in Palma Bay, Florida.

October 23, 1908. Island Bay Reservation. Unsurveyed mangrove and other islands in township forty-two south, west coast of Florida.

October 26, 1908. Loch-Katrine Reservation. Lands about reservoir site in Oregon Basin, Wyoming.

January 26, 1909. Pelican Island Reservation. Enlarged to include several other adjacent islands.

February 3, 1909. Hawaiian Islands Reservation. Islets

and reefs situated in the Pacific Ocean, near the western extension of the Hawaiian archipelago.

February 25, 1909. Salt River Reservation. Parts of townships four and five north, Gila and Salt River Meridian, Arizona.

February 25, 1909. East Park Reservation. Parts of townships seventeen and eighteen north in California.

February 25, 1909. Deer Flat Reservation. Embracing parts of townships two and three, Boise Meridian, Idaho.

February 25, 1909. Willow Creek Reservation. Embracing part of township twenty-one, Montana Meridian, Montana.

February 25, 1909. Carlsbad Reservation. Embracing two reservoir sites along Pecos River in townships eighteen, nineteen, twenty, and twenty-one south, New Mexico.

February 25, 1909. Rio Grande Reservation. Embracing parts of townships seven, eight, nine, ten, eleven, twelve, and thirteen south, Principal Meridian, New Mexico.

February 25, 1909. Cold Springs Reservation. Embracing parts of townships four and five north, Willamette Meridian, Oregon.

February 25, 1909. Belle Fourche Reservation. Embracing parts of townships eight, nine, and ten north, Black Hills Meridian, South Dakota.

February 25, 1909. Strawberry Valley Reservation. Embracing parts of townships three and four south, Uinta Meridian, Utah.

February 25, 1909. Keechelus Reservation. Embracing parts of townships twenty-one and twenty-two north, Willamette Meridian, Washington.

February 25, 1909. Kachess Reservation. Embracing Kachess Lakes reservoir site, Washington.

February 25, 1909. Clealum Reservation. Embracing parts of townships twenty, twenty-one, and twenty-two north, Willamette Meridian, Washington.

February 25, 1909. Bumping Lake Reservation. Embracing the Bumping Lake reservoir site, Washington.

February 25, 1909. Conconully Reservation. Embracing part of township thirty-five north, Willamette Meridian, Washington.

February 25, 1909. Pathfinder Reservation. Embrac-

ing parts of townships twenty-six, twenty-seven, twenty-eight, twenty-nine, and thirty north, Wyoming.

February 25, 1909. Shoshone Reservation. Embracing part of township fifty-two north, Wyoming.

February 25, 1909. Minidoka Reservation. Embracing parts of townships eight and nine south, Boise Meridian, Idaho.

February 27, 1909. Tuxedni Reservation. Embracing Chisik Island and Egg Island entrance to Tuxedni Harbor in Cook Inlet, Alaska.

February 27, 1909. Saint Lazaria Reservation. Embracing the Island of Saint Lazaria, entrance to Sitka Sound, Alaska.

February 27, 1909. Yukon Delta Reservation. Embracing all the treeless tundra of the delta of the Yukon River west of longitude one hundred and sixty-two degrees and twenty minutes west from Greenwich and south of the Yukon River, Alaska.

February 27, 1909. Culebra Reservation. Embracing the islands of the Culebra group, Porto Rico, excepting Culebra Island, which is a naval and lighthouse reservation.

February 27, 1909. Farallon Reservation. Embracing the middle and north Farallon Islands and other rocks northwest of the same, located on the coast of California near San Francisco.

February 27, 1909. Behring Sea Reservation. Embracing Saint Matthew Island, Hall Island, and Pinnacle Islet, approximately in latitude sixty degrees and thirty minutes north, longitude one hundred and seventy-two degrees and thirty minutes west, in Behring Sea, Alaska.

February 27, 1909. Pribilof Reservation. Embracing Walrus Island and Otter Island of the Pribilof group, in Behring Sea, Alaska.

March 2, 1909. Bogoslof Reservation. Embracing volcanic islands commonly known as the Bogoslof group, approximately in latitude fifty-three degrees and fifty-eight minutes north, longitude one hundred and sixty-seven degrees and fifty-three minutes west from Greenwich, Behring Sea, Alaska.

Since then these have been added:

April 11, 1911. Clear Lake Reservation. Embracing the Clear Lake reservoir site, California. Modified by ex-

ecutive order of January 13, 1912, by eliminating, for administrative purposes, three hundred and twenty acres surrounding the Reclamation dam.

January 11, 1912. Hazy Islands Reservation. Embracing Hazy Island group, approximately in latitude fifty-five degrees and fifty-four minutes north, longitude one hundred and thirty-four degrees and thirty-six minutes west from Greenwich, Alaska.

January 11, 1912. Forrester Island Reservation. Embracing Forrester Island and Wolf Rock, approximately in latitude fifty-four degrees and forty-eight minutes north, longitude one hundred and thirty-three degrees and thirty-two minutes west from Greenwich, Alaska.

January 11, 1912. Niobrara Reservation. Embracing parts of townships thirty-three and thirty-four north, ranges twenty-six and twenty-seven west, Sixth Principal Meridian, Nebraska, the same being a part of the abandoned Fort Niobrara Military Reservation. This reservation was enlarged by executive order of November 14, 1912, adding approximately nine hundred acres, which included the building and old parade-grounds of the military reservation.

February 21, 1912. Green Bay Reservation. Embraces Hog Island at the entrance to Green Bay, within township thirty-three north, range thirty east, of the Fourth Principal Meridian, Wisconsin.

December 7, 1912. Chamisso Island Reservation. Embraces Chamisso Island and Puffin and other rocky islets in its vicinity, approximately in latitude sixty-six degrees and thirteen minutes north, longitude one hundred and sixty-one degrees and fifty-two minutes west from Greenwich, at the eastern end of Kotzebue Sound, Alaska.

December 17, 1912. Pishkin Reservation. Embraces Pishkin reservoir site in townships twenty-two and twenty-three north, range seven west, Montana Principal Meridian, Montana.

December 19, 1912. Desecheo Island Reservation. Embraces Desecheo Island in Mona Passage, Porto Rico, but is subject to naval and lighthouse purposes.

January 9, 1913. Gravel Island Reservation. Embraces Gravel Island and Spider Island, approximately in latitude forty-five degrees and fifteen minutes north, longitude

eighty-six degrees and fifty-eight minutes west from Greenwich, in Lake Michigan, Wisconsin.

March 3, 1913. Aleutian Islands Reservation. Embraces all of the islands of the Aleutian chain, Alaska, including Unimak and Sannak Islands on the east and Otter Island on the west, reserved for preserve and breeding-ground for native birds, and in addition thereto for the propagation of reindeer and fur-bearing animals and encouragement and development of the fisheries.

April 21, 1913. Walker Lake Reservation. Embraces 9.68 acres of land in section one, township fifteen north, range twelve east, and five acres in township sixteen north, range twelve east, of the Fifth Principal Meridian, Arkansas.

May 6, 1913. Petit Bois Island Reservation. Embraces all of the public land upon Petit Bois Island located in the Gulf of Mexico about ten miles off the coast of Alabama and Mississippi, in townships nine and ten south, ranges three and four west of Saint Stephens Meridian.

September 4, 1913. Anaho Island Reservation. Embraces Anaho Island in Pyramid Lake, Nevada.

June 6, 1914. Smith Island Reservation. Embraces Smith and Minor Islands, situated in the Straits of Juan de Fuca, about fourteen miles north by west from Port Townsend, Washington.

January 20, 1915. Ediz Hook Reservation. Embraces an arm of land extending into the Straits of Juan de Fuca, in township thirty-one north, range six west of Willamette Meridian, Washington.

January 20, 1915. Dungeness Spit Reservation. Embraces an arm of land extending into the Straits of Juan de Fuca, in township thirty-one north, ranges three and four west of Willamette Meridian, Washington.

By executive order of March 19, 1913, the protection of native birds within the Panama Canal Zone was established, the jurisdiction over same to lie with the Isthmian Canal Commission and its successor, the governor of the Canal Zone, and on January 27, 1914, an amendatory executive order was issued prohibiting night hunting, the use of spring-guns and traps, etc., with additional penalties therefor.

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